## THE NEOTROPICAL ORB-WEAVING SPIDERS OF THE GENERA WIXIA, POZONIA, AND OCREPEIRA (ARANEAE: ARANEIDAE)

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Abstract. The species previously placed in Wixia fall into three distinct genera: Wixia, Pozonia, and Ocrepeira. Wixia is known from only one pair of adults collected recently and the holotype collected in the last century, and several immatures, all from the Amazon region. Three species of Pozonia, all previously known, are distributed from Mexico and the West Indies to Paraguay. Ocrepeira contains 67 species, two north of Mexico and 65 from Mexico to Argentina and Chile. Forty-six of the Ocrepeira species are new ( $70 \%$ of the species) while $18(30 \%)$ were previously known. There are eight new synonyms of the 18 previously known names. Two North American species of Wixia are transferred to Ocrepeira.

The species of the three genera differ in the shape of the carapace and the abdomen.

The few webs that are known, made by species of Pozonia and Ocrepeira, are complete orbs placed almost vertically:

## INTRODUCTION

The family of araneid orb weavers, Araneidae, is the third largest spider family. The only larger ones are the jumping spiders (Salticidae) and the mainly Holarctic Linyphiidae. Comprehensive revisions and keys covering the whole Neotropics are not available for either of these families. Perhaps half of the Neotropical araneid orb weavers have now been revised. The first revisions of Neotropical species were made together with the Nearctic species: Gea and Argiope (Levi, 1968), Neoscona (Berman and Levi, 1971), and Eriophora (Levi, 1971). These will eventually be updated. The first revision of the Neotropical araneids was that of Micrathena and Chaetacis (Levi, 1985), followed by Alpaida

[^0](Levi, 1988), Witica (Levi, 1986), Epeiroides, Bertrana, and Amazonepeira (Levi, 1989), Araneus, Dubiepeira, and Aculepeira, (Levi, 1991a), Larinia (Harrod et al., 1991), Edricus and Wagneriana (Levi, 1991b), and Parawixia (Levi, 1992).

My goal has always been to make it possible to determine animals so that they can be used for research. When 1 started work. it was a longstanding tradition that systematists would determine animals for biologists in other fields. However, it seemed absurd to me that systematists spent their time identifying specimens, rather than working on revisions and making this knowledge directly available to these specialists. Revisions allow the identification of specimens and also provide a context for the naming of new species. Naming of new species should not be attempted before the genus has been revised and common species, named in the last century, illustrated and their variation noted.

When I started work, there were few spider specialists in North America. When Jocelyn Crane worked on the behavior of Venezuelan jumping spiders (1948), she first had to do the taxonomic work herself. At the same time, Kaston published Spiders of Connecticut (1948). This work showed the value of a clear text and good illustrations in taxonomic work. Spiders can readily be identified with short, well-illustrated descriptions such as these, but not with lengthy, elaborate descriptions accompanied by poor illustrations (for example, Petrunkevitch, 1925). Therefore, my descriptions of Neotropical orb weavers are accompanied by drawings of sev-
eral views of the spider. To answer questions about my working and drawing methods for these revisions, a description is provided below.

## MATERIALS AND ACKNOWLEDGMENTS

Specimens from the following collections were used whose curators I thank for making the material available.

AMNH American Museum of Natural History, New York, United States; N. Platnick, L. Sorkin
BMNH Natural History Museum, London, Great Britain; P. Hillyard, F. Wanless

CAS California Academy of Sciences, San Francisco, California, United States; W. J. Pulawski, D. Ubick
CUC Cornell University Collection, kept in the AMNH; N. Platnick
CV Carlos Valderrama A., Bogotá, Colombia
DAD D. A. Dean, College Station, Texas, United States
DU D. Ubick, San Francisco, California, United States
FSCA Florida State Collection of Arthropods, Gainesville, Florida, United States; G. B. Edwards
HECO Hope Entomology Collections, Oxford University, Oxford, Great Britain; D. Spencer-Smith, I. Lansbury

IESC Instituto de Ecologia, Academia de Ciencias, Cuba; G. Alayón
IBNP Inventario Biológico Nacional, San Lorenzo, Paraguay; J. A. Kochalka
INPA Instituto Nacional de Pesquisas da Amazonia, Manaus, Brazil; J.
A. Raphael

IRSNB Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium; I. Baert
JAK J. A. Kochalka
JMM J. M. Maes, León, Nicaragua
MACN Museo Argentino de Ciencias

Naturales, Buenos Aires, Argentina; E. A. Maury
MCN Museu de Ciências Naturais, Porto Alegre, Rio Grande do Sul, Brazil; E. H. Buckup
MCZ Museum of Comparative Zoology, Cambridge, Massachusetts, United States
MECN Museo Ecuatoriano de Ciencias Naturales, Quito, Ecuador; L. Avilés
MEG M. E. Galiano, Buenos Aires, Argentina
MHNM Museo de Historia Natural de Montevideo, Uruguay; R. M. Capocasale
MLJ Maria-Luisa Jiménez, La Paz, Mexico
MLP Museo de Universidad Nacional, La Plata, Argentina; R. F. Arrozpide
MNHN Muséum National d'Histoire Naturelle, Paris, France; C. Rollard, J. Heurtault, J. Kovoor
MNRJ Museu Nacional, Rio de Janeiro, Brazil; A. Timotheo da Costa
MNSD Museo Nacional de Historia Natural, Santo Domingo, Dominican Republic; F. Del Monte
MUSM Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru; D. Silva D.
MZSP Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil; P. Vanzolini, L. Neme, J. L. M. Leme

MZUF Museo Zoologico de la Specola, Università di Firenze, Florence, Italy; S. Mascherini
NMB Naturhistorisches Museum, Basel, Switzerland; C. Stocker
NRMS Naturhistoriska Riksmuseet, Stockholm, Sweden; T. Kronestedt
PAN Polska Akademia Nauk, Warszawa, Poland; A. Riedel, W. Starega, J. Prószynski, A. Slojewska, E. Kierych
RLCB Renner L. C. Baptista, São Paulo, Brazil

SMF Forschungsinstitut Senckenberg, Frankfurt am Main, Germany; M1. Grasshoff
USNM National Museum of Natural History, Smithsonian Institution, Washington, D.C., United States; J. Coddington
ZMB Zoologisches Museum der Humboldt Universität, Berlin, Germany; M. Moritz
ZMK Zoologisk Museum, København, Denmark; H. Enghoff

I want to thank numerous individuals for helping. L. Leibensperger helped with various tasks including rewording the manuscript. L. R. Levi reworded sentences. D. Sherry word processed and assembled the paper. F. Boisse-Kilgo edited meticulously. M. A. Serna D. and E. H. Buckup provided locality information. R. Baptista, W. Eberhard, J. Kochalka, and Y. Lubin gave ecological and behavioral data. J. Prószynski supplied information on the Taczanowski collection. O. Kraus gave advice on a nomenclature problem. Various readers of previous manuscripts made suggestions to improve these papers and two anonymous readers suggested improvements and corrections in this paper. NSF grant GB-36161 supported the start of the revisions of Wixia and related genera. Publication costs of this study were covered in part by the Wetmore Colles Fund.

Equipment. I. American Optical dissecting microscope with Greenough optics (ca. 1950) with $0.7 \times, 4 \times$, and $8 \times$ objectives. The $12 \times$ ocular gives magnifications of $8.4 \times, 48 \times$, and $96 \times$. The right reticule has a 20 by $20(400$ square) grid. Other oculars available for higher magnification are $18 \times$ and $30 \times$.
2. Leitz dissecting microscope also with Greenough optics, $1 \times, 4 \times$, and $10 \times$ objectives and $15 \times, 25 \times$, and $32 \times$ oculars. In the reticule of the American Optical microscope, alternate rows of squares are numbered, which makes this reticule easier to use than the Leitz reticule with unnumbered squares.
3. Leitz Smith interference compound
microscope: used rarely for small genitalia. Used sometimes with reflected light provided by a fiber light system (a method first suggested by J. Coddington). The optics of a compound microscope are far superior to those of any dissecting microscope. The genitalia are in a depression slide covered with alcohol.
4. Dolan-Jenner Fiber Light (Series 180) with two arms, one lighting from the left, the other from the right. Both lights are used to see outlines; for shading and sculpturing illustrations, only the left is used.

Containers. 1. Syracuse watch glasses (with grooved and beveled edges for stacking) are used for preliminary examination of specimens. I prefer them with ground rims so they can be stacked.
2. Stender glass dishes ( 22 mm deep, 52 mm inside diameter) with ground glass lids are used for detailed examination and illustration. One Stender dish is filled to onequarter depth with light-colored washed sand, another with black silicon carbide (Carborundum, B. Opell, 1983), lapidary grade, 80 grit size. A third dish is filled on one side with white paraffin and on the other with black paraffin (made by blackening paraffin with lampblack). When making the dish, a temporary cardboard divider keeps the hot paraffin from mixing and is removed when it solidifies. While the paraffin is soft, depressions of various sizes are made, some in the black-white border.

Art Materials. 1. Papers. Tracing paper (letter-size onion skin), coquille board no. 3, two-ply Strathmore board, for line illustrations and Bainbridge board ( 38 by 51 $\mathrm{cm})$ for mounting illustrations. The sculptured coquille board, which used to be used widely for illustrations of newspaper advertisements, is increasingly difficult to find in art stores and in consistent quality, whiteness, and evenness of texture.
2. Drawing Supplies. Rapidograph or other technical pen, sizes $000(0.25 \mathrm{~mm})$, $00(0.3 \mathrm{~mm}), 2,3$, and 4 . Black India ink: Rapidograph or Pelikan drawing ink A. Opaque white water paint (Steig's ProWhite). Good quality no. 2 pencils. Wil-
liam Corn's lithographic crayons in pencil shape no. 3, 4, and 5. Black Staedtler Omnichrom pencils that can be sharpened (first suggested by R. Forster). Sandpaper for sharpening crayons. Camel-hair brushes, sizes $1,00,000$. Crow-quill pen tip and holder and a desk fluorescent light having a magnifying lens.
3. Cards approximately 13 by 20 cm . Each card is gridded into squares of a given size: 5,6 , or 7 mm etc., up to 15,18 , 21 , and 25 mm . Grids are drawn with no. 00 Rapidograph pens.
4. Fixative: Krylon no. 1303 Crystal Clear Spray or Krylon no. 1306, Workable Fixative.
5. 3M Scotch Positional Mounting Adhesive rolls for mounting illustrations on Bainbridge board.

Illustrations. In males, the left palpus is amputated (and stored in a 2 by 6 mm vial stoppered with cotton). In females, the epigynum is left attached, but pulled out slightly with a needle for examination of posterior and lateral views.

The following conventions are used in making illustrations. The illumination comes from the upper left. The anterior end of the animal is placed toward the top of the page, the posterior end toward the bottom. In side view, the head is on the left, the tail end on the right. The left side and the structures are illustrated. In illustrating epigyna and palpi, I modify the convention to ease visualization of structures, e.g., in posterior view of the epigynum, the venter is up, the dorsum is down as you would expect if you flipped it over.
A grid card is selected so as to produce a finished illustration of 6 to 9 cm in size, about 2 to 3 times the published size. The card grid corresponds to the microscope reticule grid. A piece of tracing paper is folded in half and placed over the grid card. The pencil outline is drawn on the tracing paper. If the illustration is symmetrical, only half of the structure need be drawn; the drawing can be folded and the other half traced. Great care is required when folding to avoid distortion.

When the outline is completed, the back of the tracing paper is blackened by rubbing with a graphite pencil. The paper is put blackened-side down on a piece of Coquille board. Tracing the outline with a sharp graphite pencil transfers it to the board. Care must be taken not to dent the texture of the board.

The outline is corrected with pencil while referring to the specimen. The outline is then inked with a no. 00 Rapidograph pen, with the help of a magnifying glass under a fluorescent light. The inked outline is placed next to the microscope for completion. No. 3 and 4 Rapidograph pens are used to blacken totally the darkest areas. Cleaning brushes used for this purpose is time-consuming. The white of the reflections, the lightest areas, is surrounded lightly with Omnichrome pencil. Dimmer areas are shaded in with no. 4 lithographic crayon and Omnichrome pencils, darker areas with softer crayons. Fine white lines are made around sclerites with water color white. A camel-hair brush is used, drawn to a point by lightly twisting the wet point while touching paper. There may be problems differentiating transparent areas and borders of sclerites; for example, palpal structures close to the cymbium may be obscured by long cymbial setae. The palpus (or other structure) should be turned slightly and compared with the drawing to make sure the shape of the sclerites is correct. The palpus should be pulled apart only if many specimens are available.

The illustration is cleaned under the magnifying light. Areas covered by lithographic pencil are difficult to correct: small white dots can be made to make dark areas lighter, or some black can be lifted up with 3M Scotch Magic Tape (a G. Hormiga invention). When completed, the illustration is sprayed with artist's fixative and later mounted on Bainbridge board. After mounting, the illustrations are individually numbered with a Rapidograph lettering set. Illustrating techiniques are described in some detail in Zweifel (1988) and Hodges (1988).

Line illustrations are made on smooth Strathmore board, 2 to 3 times larger than the coquille illustrations, and are reduced to the desired size by photocopying. The photocopies are mounted with the coquille illustrations.

When illustrating and measuring, one is faced with a dilemma between pulling the specimen apart in order to be highly accurate or measuring less accurately and leaving the specimen intact for the next study. It is usually preferable to avoid damaging the specimen. Genitalia or other parts are never left on microscope slides. If a structure such as the female genitalia must be cleared with Hoyer's Mectium (Krantz, 1970) and mounted between two large coverslips, they are taken off afterward and the structure is stored in a small vial with the rest of the specimen.

Type specimens. The original specimens, the types of early describers, are often not labeled as such. The concept of a holotype to which the species name is attached was not applied until early this century. The type method is quite recent, appearing after 1850 . The original Code of Nomenclature of 1901 had no directions for types (Mayr, 1969; Mayr and Ashcroft, 1991). Often it is not known if the specimens examined and labeled as types are really the original specimens. The labeling of specimens as types of the Emerton collection in the MCZ was done by E. B. Bryant, not by Emerton. The American specimens of Taczanowski at the Polish Academy of Science had only numbers that were matched to notebooks in the 1930's by Zolzislaw Raabe, who later became professor at the university in Warszawa; Raabe could not locate all specimens and some file cards indicate missing specimens (J. Prószynski, personal communication). Eugène Simon, and perhaps also N. Banks, placed additional spiders into the vials that contained the original specimens, sometimes of similar but different species. In the British Museum, many neat, inked labels of O. P.- and F. O. P.-Cambridge were made by E. Browning and others.

Lectotypes here are only designated when a mixture of species is suspected among the syntypes. Neotypes are designated only where essential to avoid later confusion. In previous revisions all adult specimens examined for the revision were designated as paratypes. In this paper only specimens from the type locality or nearby are designated as such.

Descriptions. Descriptions are made following a standard format. An outline to be filled in later is in the computer. Notation of colors: white on the carapace and sternum in these araneid genera is usually a result of pigment granules under the exoskeleton. Fine black pigment spots are referred to as dusky. Eye measurements are expressed as ratios of the diameter (with cornea in profile) to that of the anterior median eyes (Figs. 27, 28). Distances between eyes of the anterior row are expressed as diameters of the anterior median eyes (in profile); distances between eyes of the posterior row are given as diameters of the posterior median eyes. The height of the clypeus, the distance between anterior median eyes and the edge of the carapace, is given in diameters of an anterior median eye and measured below the eye (Fig. 28f). These measurements are approximate as araneid eyes are quite variable and difficult to measure; often one side is slightly different from the other. Grasshoff (1968) discusses some of the difficulties in measuring araneid spiders and their eyes.

Other measurements are made using the ocular reticule with 400 squares and, while accurate to about one-tenth of a millimeter, the measurements must be regarded as approximate for several reasons. The total length of the specimen depends on the angle of the abdomen to the carapace. In Wixia, Pozonia, and Ocrepeira the abdomen is at an angle to the cephalothorax (Fig. 40). A slight dorsal pressure makes the animal longer. [Often, as in Ocrepeira (Fig. 44), when illustrating the abdomen the carapace is pushed slightly down to make the abdomen more level to better
show the pattern.] Measuring carapace length cannot be done accurately without removing the abdomen, which usually covers the posterior of the thoracic region. To avoid amputation, the measurement of carapace length (Fig. 27) is best made with the specimen on sand and viewed at an angle, but the legs may obscure the view. The width of the carapace is measured at the widest part (Fig. 27), and the measurement is more accurate in specimens having a sclerotized carapace. If the carapace is soft it may be warped. In the group of genera studied here, the width of the cephalic region is measured directly behind the posterior lateral eyes (Fig. 27). However, if the longest setae of the carapace are behind the lateral eyes, they interfere with very accurate measurement. The leg articles are measured along their dorsal length; as they are not amputated and placed on a horizontal slide, there may be small errors due to parallax.

Illustrations, descriptions, and measurements were made from one specimen, and photocopies of all illustrations are kept. A more sclerotized or a softer specimen may show features not visible in other specimens. If there is considerable variation, additional illustrations are made. Notes on variation in color, pattern, or morphology are recorded on a second sheet for records and collections. Also noted on this sheet are the total lengths of about 10 females and 10 males from different localities. Total length is helpful for determining spiders, although less consistent than the length of the leg articles (see also Levi, 1985).

When only a few specimens are available, it is difficult to decide whether some small variation actually means that the specimen belongs to a different species. I expect a separate species to exhibit not only consistent differences in genitalia, but also in color or morphology, and show similar differences in the opposite sex. Nevertheless, even with care, lumping or splitting mistakes are unavoidable.

Mapping. Our own outline maps are used and photocopied to reduce their size.

The dots are transfer dots; labeling of maps is done with a Kroy machine. The most valuable references for finding old Neotropical localities are Selander and Vaurie (1962) for Mexico and Central America, and the collection of gazetteers of Neotropical bird collecting localities by R. Paynter (1975-1991). [Several collectors of South American spiders specialized in birds as well as spiders: K. Jelski and J. Sztolcman (who collected for L. Taczanowski), E. Goeldi (who collected for E. Simon), and Graf Keyserling, E. Simon himself, and more recently, H. Sick (Levi, 1964).] Other localities cited in the Paynter gazetteers were collecting localities frequented by collectors of various animals in the 19th century. Modern automobile maps of individual countries, especially those with gazetteers, are useful and available from map stores. Automobile maps are a vailable for individual Mexican states and for separate regions of Argentina.

Literature citations of collection records are ignored since too many specimens in collections are misidentified.

Systematics of Neotropical orb weavers. It is not possible to estimate the number of araneid orb-weaver species based on our current knowledge. (While I anticipated about twenty species in the genus Wixia, the collections had close to 70 species and actually fell clearly into three genera.) The phylogenetic relationships among the orb weavers are currently unknown but certain features could turn out to be conclusive. The paramedian apophysis may be absent, present as a separate sclerite, or fused to the conductor. In Wixia, Pozonia, and Ocrepeira, the presence of a paramedian apophysis attached to the conductor in the male palpus (Figs. 23, 32, 46, 47) may indicate that they are related. Other genera of the Neotropics whose males have a paramedian apophysis attached to the conductor are: Acacesia, Alpaida, Cyclosa, Edricus, Molinaranea, Parawixia, Scoloderus, Verrucosa, Wagneriana, and Xylethrus. Others probably have not been examined or their males are not known. In Eriophora, Gasteracantha
cancriformis, and Acanthepeira the paramedian apophysis is a separate sclerite. Some Micrathena species have a paramedian apophysis attached to the conductor, others a free sclerite, others lack this structure (M. funebris, M. sagittata, M. gracilis, Levi, 1985): apparently it is secondarily lost. But is absence of the paramedian apophysis in other genera due to secondary loss or did they never evolve this structure? Of the genera that have a paramedian apophysis, Molinaranea and Xylethrus have not been revised. A. A. Lise is currently revising Verrucosa. Most of these genera are American. Parawixia may also be found in Australia, and only Cyclosa species are found worldwide (see Table 1).

Other characters that support this grouping are: the positions of the conductor in the palpus, the attachment of the median apophysis, the number of patellar setae, the structure of the epigynum, and the frequent median, posterior (row of) tubercles on the abdomen in the Alpaida group of genera (but not in Ocrepeira).

The conductor is on the edge of the tegulum in Araneus (Levi, 1991a, fig. 3) and in Larinia (Harrod et al., 1991, fig. 15), while in the Ocrepeira and Alpaida group of genera it is attached to the center of the bulb, away from the edge, closer to the cymbium (Figs. 23, 32). The median apophysis, whose attachment is offset behind the sclerite in Araneus (Levi, 1991a, fig. 3) and Larinia (Harrod et al., 1991, figs. 14,15 ), is on the side of the sclerite in the Ocrepeira, Alpaida group of genera (Figs. 23, 32). While most average-sized species of the Araneus, Larinia group have 2 palpal patellar setae, there is only one in the Ocrepeira, Alpaida group. [However, dwarf males of Kaira lack these setae, and giant males of Eriophora (allied to Alpaida) have two. The smallest Eriophora male, E. nephiloides O. P.-Cambridge, and the largest of the Parawixia species, P. bistria$t a$ Rengger, have one large macroseta and one small.]

The scape of the epigynum has evolved numerous times in various araneoid fam-
ilies. In Araneus it has a pocket at its tip (Levi, 1991a, fig. 1). In Larinia this pocket may be behind a thick lip (Harrod ct al., 1991, fig. 1). In Aculepeira (allied to Araneus) the tip is pointed (Levi, 1991a, fig. 543). It rarely, if ever, has a pocket in Eriophora, Parawixia, and Ocrepeira (Figs. 7, 29); if flat and rounded, it may have a plain, ventral depression at the tip.

At present, it is still too early to assess whether further evidence will agree or conflict with these characters.

## Wixia O. P.-Cambridge

Wixia O. P.-Cambridge, 1882: 437. Type species by monotypy Wixia abdominalis O. P.-Cambridge. The generic name is feminine.

Diagnosis. Wixia differs from most araneid genera by having the pedicel attached to the posterior third of the abdomen (Fig. 4b). It differs from Pozonia and Ocrepeira by having the carapace high and the clypeus about 2 to 4 diameters of the anterior median eyes, and from Pozonia by the cephalic region being almost as wide as the thoracic region (Figs. $4 \mathrm{a}-\mathrm{c}, 6$ ). It differs from Scoloderus by having the thoracic region only slightly higher than the cephalic region (Fig. 4b).

Relationship. The shape of the carapace is an apomorphy, the swollen posterior median eye area and the palpal structure are synapomorphies shared with Ocrepeira and Pozonia, and the shape of the abdomen is a synapomorphy with Pozonia.

Description. The posterior median eyes face almost to the sides, being on a joint swelling (Figs. 4, 6). The first patella and tibia are as long as the carapace (Figs. 5. 6). The abdomen is anteriorly drawn out in both sexes, the female with two tubercles on its anterior tip (Figs. 4, 6). The epigynum appears to be as in Ocrepeira or Pozonia (Figs. 1-3).

The male is smaller than the female and similar in appearance (Fig. 6). Its endite has a tooth, the first coxa has a hook (Fig. 6), the palpal patella one macroseta (Fig. 6). The palpus (Figs. 5a,b) is Ocrepeiralike with a large median apophysis (M), a
Table I. Differential characters of Parawixia (PARW), Eriophora (ERIO), Acanthepeira (ACAN), Wagneriana (Wa(in), Edricus (Data from Levi, 1971, 1976, 1977, 198s, 1992).

|  | PARW | ERIO | ACAN | WAGN | EDRI | ACAC | ALPA | WIXI | POZO | OCRE | $\begin{aligned} & \hline \text { CYCL } \\ & \text { (prov.) } \end{aligned}$ | $\begin{aligned} & \hline \begin{array}{l} \text { SCOL } \\ \text { (prov.) } \end{array} \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Pattern |  |  |  |  |  |  |  |  |  |  |  |  |
| earap. glabrous | - | - | - | - | - | - | [ ${ }^{*}$ ] | - | - | - | - | - |
| paired spots on carap. | +* | - | $+$ | - | - | - | - | - | - | - | - | - |
| marks betw. ME and LE | +* | -* | $+$ | - | - | - | - | - | - | -* | - | - |
| black eye rings | - | - | - | - | - | - | [ + * ${ }^{\text {] }}$ | - | - | - | - | - |
| sides of thoracic reg. black | - | - | - | [ ${ }^{*}$ ] | - | - | - | - | - | -* | - | + |
| pattern on sternum | [+*] | - | - | - | - | - | $\left.{ }^{-}{ }^{*}\right]$ | - | - | -* | - | - |
| abd. pattern | - | - | - | - | - | [+] | [ ${ }^{*}$ ] | - | - | +* | [+] | - |
| abd. v. with black rect. | - | [+] | - | - | - | - | - | - | - | - | - | - |
| abd. v. blaek with white spots | $+$ | - | - | - | - | - | - | - | + | +* | [+] | - |
| Female Morphology |  |  |  |  |  |  |  |  |  |  |  |  |
| clypeus high | - | - | - | - | [+] | - | - | [+] | - | - | - | [+] |
| ceph. reg. narrow | - | - | - | - | - | [+] | - | - | [+] | - | + | - |
| LE on sides of tuber. | + | - | + | - | - | - | - | - | - | - | - |  |
| PME on slight swelling | -* | - | - | - | + | + | - | + | + | +* | - | + |
| PME touch | - | - | - | - | - | - | - | - | - | - | + | - |
| PME large | - | - | - | - | [+] | - | - | - | - | - | - |  |
| carap. swollen behind eyes | + | $+$ | + | + | - | - | + | + | - | +* | - | + |
| carap. and sternum modified | - | - | - | ${ }^{-}$ | [+] | - | - | [ | [2] | [2*] | 0 | 0-2 |
| abd. with tubers. | 4-15 | 0-3 | $12+$ | 9-15 | 11 | - | -* | [2] | [2] | [2*] | 0-2 | 0-2 |
| leg IV longer than I | - | - | - | - | [+] | - | - | - | - | - | - | - |
| ant. median abd. tuber. | -* | - | + | - | - | - | - | - | - | - | - | + |
| abd. subspherical | +* | + | + | - | - | - | - | - | - | * | - | - |
| abd. oval | -* | - | - | + | - | + | + | - | - | -* | $+$ | - |
| abd. with tail | - | - | - | +* | +* | - | - | - | - | - | +* | - |
| 3 median post. tubers. | $+$ | -* | + | + | + | - | - | - | -* | - | - | - |
| abd. glabrous | - | - | - | - | - | - | [+] | - | - | - | - | +* |
| abd. attaehed post. | - | - | - | - | - | - | - | + | + | - | - | +* |
| Epigynum |  |  |  |  |  |  |  |  |  |  |  |  |
| seape | + | $+$ | + | - | - | + | - | + | + | +* | + | - |
| lobe | - | - | - | + | + | - | + | - | - | -* | - | + |
| knob at tip | -* | - | - | + | + | - | -* | - | ? | - | - | - |
| notch on face | - | - | - | - | - | - | [+*] | - | - | - | - | - |
| post. med. plate round | - | - | [+] | -* | + | - | $-$ | - | - | - | - | - |
| post. med. plate oval | - | - | - | +* | + | - | +* | - | - | - | - | - |
| post. med. triangular | - | [+] | - | - | - | - | - | - | - | - | - | - |


|  | PARW | ERIO | ACAN | WAGN | EDRI | ACAC | ALPA | wixi | POZO | OCRE | $\begin{aligned} & \text { CYCL } \\ & \text { (prov.) } \end{aligned}$ | $\begin{aligned} & \hline \text { SCOL } \\ & \text { (prov.) } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Male Morphology |  |  |  |  |  |  |  |  |  |  |  |  |
| ceph. reg. wide | - | - | [+] | - | + | - | - | - | - | - | - | + |
| hook on coxa I | + | $+$ | - | $+$ | +* | + | +* | $+$ | + | $+$ | +* | + |
| macrosetae on coxa III, IV | +* | +* | +* | +* | - | +* | +* | + | - | +* | +* | - |
| trochanter IV macrosetae | +* | +* | - | -* | + | - | -* | $+$ | - | - | - | - |
| tibia II modified | - | - | - | - | $+$ | + | -* | + | - | - | - | + |
| Palpus |  |  |  |  |  |  |  |  |  |  |  |  |
| much wider than long | - | - | - | - | - | - | - | - | - | - | [+] | - |
| patella macrosetae | 1** | [2**] | 1 | 1 | 1 | 1 | 1* | 1 | 1 | 1 | 1 | 1 |
| Y harrow | - | [+] | - | - | - | - | - | - | - | - | - | - |
| Y covers PM | - | - | [+] | - | - | - | - | - | - | - | - | - |
| PM absent | - | - | - | - | - | - | - | - | - | - | - | + |
| PNI free | - | $+$ | $+$ | - | - | - | - | - | - | - | - | - |
| PM stalk and ap | - | - | - | - | + | - | +* | - | - | - | +* | - |
| PMI L- or U-shaped | - | - | - | [+] | - | - | - | - | - | - | +* | - |
| PM disk with finger | + | + | - | - | - | - | - | - | - | - | - | - |
| PM disk with fold | - | - | [+] | - | - | - | - | - | - | - | - | - |
| PM a prong | - | - | - | - | - | $+$ | - | + | + | + | +* | - |
| M with base teeth | + | + | - | + | - | - | - | - | + | + | - | - |
| M with projection to Y | - | - | - | - | - | - | [+] | - | - | - | - | - |
| base of M with concavity | + | $+$ | - | - | - | - | + | - | - | - | - | + |
| base of M stalk with knol) | - | - | - | - | - | - | +* | - | - | - | - | - |
| long "stipes" | - | [+] | - | - | - | - | - | - | - | - | - | - |
| E cone-, bullet-shaped | +* | - | - | - | + | - | - | - | - | - | - | - |
| E knife-shaped | - | - | - | - | - | - | [ ${ }^{*}$ ] | - | - | - | - | - |
| E razor clam-shaped | - | - | [+] | - | - | - | -* | - | - | - | - | - |
| E filiform | - | - | - | - | -* | - | -* | - | - | - | [+] | - |
| A absent | - | - | [+] | - | - | - | - | - | - | - | - | - |
| A fused with embolus | - | - | - | + | $+$ | - | + | + | + | $+$ | + | + |
| A fused with R | - | - | - | + | + | - | + | - | - | - | - | - |
| R with an outgrowth | - | - | - | - | - | - | - | - | - | [ ${ }^{*}$ ] | - | - |

[^1]

Map 1. Distribution of Wixia abdominalis.
light-colored conductor (C) with a pronglike paramedian apophysis (PM) with its tip tucked under the radix ( R ).

Misplaced North American Species.
Wixia ectypa (Walckenaer, 1841) = Ocrepeira ectypa (Walckenaer).

Wixia georgia (Levi, 1976) = Ocrepeira georgia (Levi). NEW COMBINATION.

Misplaced species. The following species have been misplaced in Wixia, other than those placed here in Pozonia and Ocrepeira:
acrosomoides (Mello-Leitão, 1939: 109), is Wagneriana acrosomoides, see Levi, 1991b: 404.
albotaeniata Mello-Leitão, 1942: 403, is Alpaida rubellula (Keyserling, 1892), see Levi, 1988: 395.
destricta (O. P.-Cambridge, 1889:39) is a Parawixia not W'ixia as thought in Levi, 1991a: 179.
fissifasciata Mello-Leitão, 1945: 244, is Alpaida bicormuta (Taczanowski), see Levi, 1988: 387.
gavensis Camargo, 1950: 231, is Wagneriana gavensis (Camargo), see Levi, 1991b.
infelix Soares and Camargo, 1948: 378, fig. 35, $\delta$, is a Mecynogea.
nigropunctata Mello-Leitão, 1941: 214, is Alpaida rubellula (Keyserling, 1892), see Levi, 1988: 395. rubellula (Keyserling, 1892: 81), is Alpaida rubellula (Kevserling, 1892).
tatarendensis (Tullgren, 1905: 34) belongs to a new genus, close to Wixia.

## Unrecognizable Species.

proxima Mello-Leitão, 1940: 207, type specimens lost.

## Wixia abdominalis O. P.-Cambridge Figures 1-6; Map 1

Wixia abdominalis O. P.-Cambridge, 1882: 438, pl, 31, fig. 13, 9 . Female holotype from "the Amazon," in HECO, examined. Roewer, 1942: 881. Bonnet, 1959: 4828.

Description. Female holotype. Carapace orange-brown with short setae. Chelicerae, labium, endites, sternum, legs or-ange-brown. Dorsum of abdomen white with some dusky marks (Fig. 4a); venter dusky. Posterior median eyes 1.2 diameters of anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes two diameters apart. Ocular quadrangle wider behind than in front. Height of clypeus equal to 3.5 diameters of anterior median eyes. There is a tooth on the anterior margin of the chelicera, on each side of which is a smaller one. Abdomen drawn out anteriorly with two points (Figs. 4a,b). Total length 5.4 mm . Carapace 3.1 mm long, 2.3 wide, 1.9 wide behind eyes, 1.6 high in thoracic region. Abdomen 8.8 mm long. First femur 2.7 mm , patella and tibia 3.1 mm , metatarsus 2.0 mm , tarsus 0.9 mm . Second patella and tibia 3.1 mm , third 1.8 mm , fourth 2.5 mm .

Male. Coloration darker than female with vellow-orange and dark patches posteriorly on each side of carapace. Legs with dark rings, abdomen spotted with venter black. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.7 diameter apart. Posterior median eyes 1.4 diameters apart. The abdomen has a bulge anteriorly on the underside (Fig. 6). The fourth coxa has a macroseta on a tubercle, the fourth trochanter has a macroseta. There is a large, long macroseta on a tubercle at the proximal end of the second femur and several macrosetae at the proximal end of the fourth femur (Fig. 6). The second tibia is


Figures 1-6. Wixia abdominalis (O. P.-Cambridge). 1-4, female. 1-3, epigynum. 1a, ventral with scape. 1b, ventral, scape torn off. 2, posterior. 3a, lateral with scape. 3b, lateral, scape torn off. 4a, dorsal. 4b, lateral. 4c, eye region and chelicerae. 1b, 2, 3b, 4a, 4c, holotype. 5, 6, male. 5, left male palpus. 5a, mesal. 5b, ventral. 6, lateral.

Abbreviations. C, conductor; M, median apophysis; PM, paramedian apophysis; R, radix.
Scale lines. 1.0 mm , genitalia 0.1 mm .
proximally swollen with several long macrosetae (Fig. 6). Total length 5.5 mm . Carapace 3.4 mm long, 2.9 wide, 1.8 mm wide behind eyes, 1.6 mm high in thoracic region. Abdomen 6.2 mm . First femur 3.2 mm , patella and tibias 3.8 mm , metatarsus 2.4 mm , tarsus 0.9 mm . Second patella and tibia 2.9 mm , third 1.9 mm , fourth 2.7 mm .

Variation. The second female collected was 7.5 mm total length, abdomen 14 mm
high (Fig. 4b). It was collected with the male after completion of the revision and its illustration was added before printing.

Specimens Examined. GUYANA Kuyuwini Landing, Kuyuwini River, 20-21 Nov. 1937, imm. (W. G. Hassler, AMNH). BRAZIL Coiás: Porteria, Pirenópolis, 20 July 1942, imm. (F. Lane, MZSP 8023); Jaraguá, 12 July 1942, imm. (F. Lane, MZSP 7273); Fazenda Aceiro [?], Oct. 1962, imm. male (MZSP 7864). BOLIV1A Beni:

Estac Biológica Beni, $225 \mathrm{~m}, 14^{\circ} 47^{\prime} \mathrm{S}$, $66^{\circ} 15^{\prime} \mathrm{W}, 8-14$ Nov. 1989, ㅇ, ô (J. Coddington, S. Larcher, E. Pañaranda, C. Griswold, D. Silva D.).

## Pozonia Schenkel

Pozonia Schenkel, 1953: 24. Type species by designation and monotypy Pozonia cornuta Schenkel, 1953: 25, fig. 23, imm. Brignoli, 1983: 279. The generic name is feminine.

Note. The holotype of $P$. cornuta is immature. It is believed to be $P$. nigroventris but might be $P$. bacillifera.

Diagnosis. Pozonia species differ from those of Ocrepeira by having the pedicel attached to the posterior half, and rarely to the middle of the abdomen (Figs. 10, 14, 19). Females of the Pozonia species differ from those of Wixia and Ocrepeira by the width of the cephalic region of the carapace, which is less than half that of the thoracic region (Fig. 18). The abdomen, unlike that of most other araneids, has scattered spindle-shaped setae (Figs. $10,19)$. The sternum of the male has a median tubercle, unlike that of any other araneid male (Fig. 25).

The placement of the pedicel on the abdomen is a synapomorphy with Wixia. The shape of the carapace, the spindleshaped setae, and the structure of the male sternum are autapomorphies of Pozonia.

Specimens of Pozonia had erroneously been placed in Kaira. Kaira has the posterior median eyes facing straight up, while those of Pozonia are on a bulge and face at an angle, forward and sideways (Figs. 19, 24). Kaira has a minute, slightly sclerotized epigynum with a median keel; the epigynum of Pozonia is large and sclerolized, with a scape (Figs. 7-9, 11-13, 1517). The male of Kaira is minute and has a median apophysis with denticles and two flagella; the median apophysis of Pozonia is relatively large, bearing two prongs distally (Fig. 23), and the palpus has a paramedian apophysis, which is absent in Kaira.

Description. The carapace is higher in the thoracic region than in the cephalic region (Figs. 10, 14, 19). The posterior median eyes face forward and laterally and
are on a swelling, a synapomorphy with Wixia and Ocrepeira. The carapace has short setae behind the eyes and long hairlike setae on the anterior of the thoracic groove (Fig. 18). The abdomen has pairs of tubercles or swellings, some long setae and some spindle-shaped setae (Figs. 10, $14,19)$. Spindle-shaped setae are also found in the Australian Dicrostichus (Mastophorinae) and the theridiid genus Chrysso (Meotipa) and are believed a homoplasy. The first patella and tibia are longer than the carapace. The tibia of the first leg is curved or slightly $S$-shaped with dense, light-colored macrosetae on the underside (Figs. 10, 14, 19). Both are autapomorphies of Pozonia. The scape of the epigynum is flat with indistinct or no wrinkles and no distal pockets (Figs. 7-9, 11-13, 15-17).

The male has a tooth on the endite, a hook on the distal margin of the first coxae, and macrosetae on the fourth coxa and trochanter (Fig. 25). The second tibia has large macrosetae on the anterior surface (Fig. 26). The abdomen is shorter than that of the female (Fig. 24). The structure of the palpus is similar to that of Ocrepeira with a pointed paramedian apophysis attached to the conductor, but the median apophysis is distally forked and the terminal apophysis is a small scale (Fig. 23).

All known species are Neotropical.
Natural History. Females make a nocturnal orb web ( $P$. dromedaria) and are probably found in the canopy ( $P$. nigroventris). The web illustrated by Eberhard (1986, p. 74, fig. 4.2i), as Wixia "species 573," is that of an immature Pozonia from Cali, Colombia, total length 5 mm , abdomen, 4.7 mm high. The plane of its orb web was at a $90^{\circ}$ angle with the horizontal plane, the orb having a 7 cm horizontal diameter, 8.8 cm vertical.

Immature specimens are fairly common in collections, but adults are not.

## Key to Pozonia Females

1. Scape of epigynum short, less than twice as loug as wide (Figs. 7, 9); Mexico, Central America $\qquad$ dromedaria

- Scape longer, more than twice as long as wide (Figs. I1, 15)

2


Map 2. Distribution of Pozonia species.

2(1). Posterior median plate bottle-shaped, much wider than long (Fig. 12); Trinidad to Paraguay …............................ bacillifera - Posterior median plate roughly hexagonal, four margins concave, posteriorly narrower than lateral plates (Fig. 16); Mexico, Central America, Cuba, Jamaica nigroventris

## Pozonia dromedaria (O. P.-Cambridge), new combination Figures 7-10; Map 2

Kaira dromedaria O. P.-Cambridge, 1893: 115, pl. 14, fig. 9,8 . Female holotype from Teapa, Tabasco, Mexico, in BMNH, examined. F. P.-Cambridge, 1904: 522, pl. 51, fig. 11, \&. Roewer, 1942: 904.
Caira dromedaria:-Bonnet, 1956: 925.
Description. Female from Escazu, Costa Rica. Carapace orange with a pair of black patches behind the eyes with some short black setae and long, white hair-like setae behind the black patches and around the sides of the thoracic region. Chelicerae orange. Labium, endites orange-brown. Sternum bright orange-brown. Coxae or-ange-brown, distally lighter; legs orange with brown to black rings and patches, coxae and legs with white hair-like setae. Dorsum of abdomen white and gray, posterior with black transverse bars, some spindle-shaped black setae and some long, white hair-like setae (Fig. 10); venter black. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart, 2.2 diameters from laterals. Posterior median eyes 1.5 diameters apart, 3 diameters from laterals. Height of clypeus equal to 1 diameter of the anterior median eyes. Abdomen with pair of dorsal humps and five humps in middle (Fig. 10). Total length 8.3 mm . Carapace 4.7 mm long, 4.0 wide,
1.7 behind eyes. First femur 5.7 mm , patella and tibia 6.8, metatarsus 3.6, tarsus 1.7. Second patella and tibia 6.2 mm , third 3.9, fourth, 5.8 . Abdomen 9.6 mm high.

Variation. The female holotype has the posterior median plate of the epigynum wider than the illustrated specimen from Costa Rica. Total length of females 7.4 to 8.3 mm .

Diagnosis. The epigynum of the female differs from that of $P$. nigroventris by the short, tongue-shaped scape which is barely twice as long as wide.

Natural History. Pozonia dromedaria was collected in an orb at night in Costa Rica. The orb had closely spaced, sticky spirals reminiscent of webs of Ocrepeira species observed in Colombia. The web was slanted, at about $45^{\circ}$ and was about 2.5 m above the ground in relatively open habitat near the house (W. Eberhard, personal communication.)

Specimens Examined. MEXICO Oaxaca: 3.2 km NE Tehuantepec, 31 Aug. 1964, 9 (J., W. Ivie, AMNH). COSTA RICA San José: San Antonio de Escazu, 1,300 m, Feb. 1981, o (W. Eberhard 2177, MCZ). PANAMA Panamá: Barro Colorado Island, Lago Gatún, 19 Aug. 1939, $\%$ (A. M. Chickering, MCZ).

## Pozonia bacillifera (Simon), new combination

Figures 11-14; Map 2
Araneus (Vixia) bacillifer Simon, 1895: 819, fig. 870, ㅇ. Simon, 1897: 475. Two immature syntypes from Paraguay, in MNHN no. 8459, examined.
W'ixia bacillifera:-Roewer, 1942: 881. Bonnet, 1959: 4828.

Note. Simon's figure 870 is a mature female showing the scape of the epigy-

Figures 7-10. Pozonia dromedaria (O. P.-Cambridge), female. 7-9, epigynum. 7, ventral. 8, posterior. 9, lateral. 10, lateral.
Figures 11-14. P. bacillifera (Simon), female. 11-13, epigynum. 11, ventral. 12, posterior. 13, lateral. 14, lateral.
Figures 15-26. P. nigroventris (Bryant). 15-20, female. 15-17, epigynum. 15, ventral. 16, posterior. 17, lateral. 18, carapace. 19, lateral. 20, posterior. 21-26, male. 21-23, left palpus. 21, mesal. 22, paracymbium. 23, pulled apart. 24, dorsal. 25, sternum and left coxae. 26 , left second tibia, ventral.

num. The description was published two years later and the surviving syntypes are immature.

The posterior median eyes of Simon's immature syntype have the same diameter as the anterior medians, laterals 0.6 diameter. Anterior median eyes 1.1 diameters apart, 1.4 diameters from laterals. Posterior median eyes 1.5 their diameter apart, 1.6 diameters from laterals. Lateral eyes separated by 0.6 their diameter. Ocular rectangle is slightly wider than long and wider behind than in front. Height of clypeus equal to one-third diameter of anterior median eyes. Abdomen with three anterior tubercles. Total length 7.0 mm . Carapace 3.4 mm long, 2.7 wide, 1.2 wide behind eyes. First femur 4.4 mm , patella and tibia 5.4 , metatarsus 2.7, tarsus 1.4. Second patella and tibia 4.9 mm , third 2.9 , fourth 3.5 . Abdomen 11.5 mm high.

Description. Female from Trinidad. Cephalic region dusky with long white hairs. Chelicerae orange. Labium, endites dusky orange. Sternum bright orange. Coxae dusky orange; legs dusky orangebrown. Dorsum of abdomen white and black; venter black. Posterior median eyes 1.2 diameters of anterior medians, laterals 1 diameter. Anterior median eyes 1.2 diameters apart, 2.2 diameters from laterals. Posterior median eyes 1.8 diameters apart, 2.2 diameters from laterals. Ocular quadrangle wider behind than in front. Height of clypeus equal to 0.9 diameter of anterior median eyes. Abdomen with two anterior tubercles (Fig. 14). Total length 8.7 mm . Carapace 4.9 mm long, 4.1 wide, 2.1 wide behind eyes. First femur 6.2 mm , patella and tibia 7.5 , metatarsus 4.2 , tarsus 1.8. Second patella and tibia 7.2 mm , third 4.2 , fourth 6.2. Abdomen 10.2 mm high.

Variation. The adult female from São Paulo measured 8.7 mm total length, the abdomen 8.0 mm high; the one from Peru 13.4 total length, abdomen 17 mm high. The Peruvian female from Puerto Maldonado was darker than the others with the cephalothorax orange-brown, abdomen dusky, except for its anterior region,
which was black underneath. The posterior median plate of the epigynum of the same female was more angular than that of other specimens. The illustrations were made from the female collected in Trinidad.

Diagnosis. The epigynum differs from that of $P$. nigroventris by the bottle-shaped posterior median plate, from that of $P$. dromedaria by the longer scape (Fig. 11).

Specimens Examined. TRINIDAD Maracas Valley, Feb. 1972, ㅇ (J. A. L. Cooke, AMNH). PERU Huánuco: Cueva de Las Lechuzas, Tingo María, 31 June 1967, ㅇ (A. F. Archer, W. Sherbrooke, AMNH). Madre de Dios: Cuzco Amazonica Lodge, nr. Puerto Maldonado, 8 Mar. 1990, $\%$ (D. Silva D., MUSM); Zona Reservada Tambopata, 3 June 1988, \& (J. Coddington, USNM). BRAZIL São Paulo: Amparo, Fazenda Santa Maria, 25 Nov. 1942, imm. (F. Lane, MZSP 8071); Ilha Vitória, 16 Mar.-7 June 1965, o (Exped. Depto. Zool., MZSP 4141). Paraná: Serra Negra, imm. (A. Mayer, MNRJ). Rio Grande do Sul: Porto Alegre, imm. (P. Buck, MNRJ); imm., 1984 (A. A. Lise, MCN).

## Pozonia nigroventris (Bryant), new combination Figures 15-26; Map 2

Wixia nigroventris Bryant, 1936: 329, pl. 23, fig. 10. Immature female holotype from Loma del Gato, $2,600-3,325 \mathrm{ft}$ [ $790-1,010 \mathrm{~m}$ ], Sierra de Cobre, Santiago Prov., Cuba, in MCZ, examined. Bryant, 1940: 346, fig. 113, t (incorrect secondary spelling nigriventris). Roewer, 1942: 882. Bonnet, 1959: 4829 (as nigriventris).
? Kaira granadensis Mello-Leitão, 1941: 118. Immature holotype from Cucuta [Depto. Norte de Santander], Colombia, in MNRJ, examined. Brignoli, 1983: 271. NEW DOUBTFUL SYNONYMY.
? Pozonia cornuta Schenkel, 1953: 25, fig. 23, imm. Immature male holotype from El Pozón, Falcon Prov., Venezuela, in NMB no. 1815a, examined. NEW DOUBTFUL SYNONYMY.

Nomenclatural note. Although the holotype of nigroventris Bryant is immature, it is certain that the male collected later in Cuba is conspecific since we can expect that there is only one species belonging to

Pozonia in the Greater Antilles. Males and mature females were found in Mexico and Central America. The immature holotype of granadensis Mello-Leitão is similar to the immature holotype of nigroventris but it might be A. dromedaria. Pozonia cornuta is probably this species but it might be $P$. bacillifera.

Description. Female from Barro Colorado Island, Panama. Carapace, chelicerae, labium, endites, sternum orange-yellow. Carapace darker behind median eyes and with long, white hair-like setae. Coxae, legs yellowish. Dorsum of abdomen white with black streaks (Fig. 20), with some spindle-shaped black setae; venter black (Fig. 19). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter of anterior medians. Anterior median eyes 1.2 diameters apart, 1.6 diameters from laterals. Posterior median eyes 1.3 diameters apart, 2.3 from laterals. Ocular rectangle wider than long. Clypeus height equal to 0.6 diameter of anterior median eyes. The first and second legs have many macrosetae on distal part of tibia and along metatarsus. Abdomen long and narrow (Figs. 19, 20). Total length 14 mm . Carapace 5.1 mm long, 4.1 wide, 2.1 behind eyes. First femur 6.5 mm , patella and tibia 8.0, metatarsus 4.7, tarsus 2.0. Second patella and tibia 7.5 mm , third 4.5 , fourth 6.4. Abdomen 16 mm high.

Male from Sierra de Cobre, Cuba. Carapace orange-brown, cephalic region lighter. Chelicerae dusky brown. Labium, endites brown. Sternum orange with dusky knob. Legs dusky orange. Venter of abdomen black. Posterior median eyes 0.7 diameter of right anterior median, anterior laterals 0.7 diameter, posterior laterals 0.4 . Anterior median eyes their diameter apart. Posterior median eyes with only right one on a tubercle. Ocular quadrangle a transverse rectangle. Height of clypeus equal to 1 diameter of anterior median eyes. Sternum with a median knob (Fig. 25). First coxa with hook and dorsal tubercle, fourth with macroseta. Fourth trochanter with one macroseta. Second tibia
thicker than first, slightly flattened, swollen, with prolateral macrosetae (Fig. 26). Abdomen seen in Figure 24. Total length 5.6 mm . Carapace 3.1 mm long, 2.3 wide, 1.1 wide behind eyes. First femur 4.1 mm , patella and tibia 4.8, metatarsus 2.8 , tarsus 1.5. Second patella and tibia 4.1 mm , third 2.9, fourth 3.8.

Note. Males and females were matched because both were uniquely found in the Greater Antilles.

Variation. The immature holotype of $A$. nigroventris (Fig. 20) is only 4.5 mm long, and has posterior median eyes larger than anterior medians, and the ocular rectangle wider than long. Carapace 2.5 mm long, 2.2 wide, 1.1 behind eyes. First patella and tibia 3.8 mm , abdomen 4.8 high. The specimen from Guatemala has the clypeus less than half the AME diameter. Total length of females 8.4 to 14 mm , of males 5.5 to 6.5. Illustrations of the female (Figs. 1519) were made from specimens from Barro Colorado Island, Panama, and of the male (Figs. 21-26) from a specimen from Cuba.

Diagnosis. The epigynum of the female differs from that of A. dromedaria by the long scape (Figs. 15-17); it differs from that of both A. dromedaria and A. bacillifera by the hexagonal shape of the posterior median plate (Fig. 16).

Natural History. A male from Panama came from a canopy sample.

Specimens Examined. MEXICO Yucatan: Kabah [Kabá], 19 July 1964, ô (J. C. Pallister, AMNH). GUATEMALA Peten: Poptún, Finca Ixobel, 7 Feb. 1980, ô (V. Roth, AMNH). COSTA RICA Puntarenas: nr. Tárcoles, Reserva Carara, 23 Nov. 1984, imm. (W. Eberhard 2682, MCZ). Cartago: Turrialba, 23 July- 13 Aug. 1965, imm. (A. M. Chickering, MCZ). PANAMA Panamá: Summit, July 1939, \&, Aug. 1950, 2 ô (both A. M. Chickering, MCZ); Barro Colorado Isl., 23 May, 1952, 오 (T. C. Schneirla, AMNH); Pipeline Rd. nr. Gamboa, 25 July 1979, o (M. K. Stowe, MCZ); 12 July 1976, ô (Y. Lubin, JAK); Fort Sherman, Aug. 1939, ô (A. M. Chickering, MCZ); Chiva Chiva, Oct. 1946, ô (N. L.
H. Krauss, AMNH); Chilibre, July 1950, imm. (A. M. Chickering, MCZ).

CUBA Sierra del Cobre, $3,000-3,800 \mathrm{ft}$ [900-1 ,200 m], 3-7 July 1936, ô (P. J. Darlington, MCZ); Loma de la Alegría, Cayo Sabinal, Camagüey, 28 Jan. 1989, imm. (A. Avila Calvo, IESC). JAMAICA St. Thomas: $6.5 \mathrm{mi}[10.4 \mathrm{~km}]$ NE Bath, 10 Oct. 1957, imm. (A. M. Chickering, MCZ).

## Ocrepeira Marx

Ocrepeira Marx, 1883: 22. Type species by monotypy Epeira ectypa Walckenaer.
Amamra O. P.-Cambridge, 1889: 55. Type species by monotypy Amamra bituberosa O. P.-Cambridge, 1889.

Notes. Marx failed to indicate that he was introducing a new generic name and only listed ectypa in a list of species in combination with a previously unknown generic name: Ocrepeira. Neave (19391975) does not list this generic name. According to the International Code of Zoological Nomenclature (1985) Art. 12 b (5), Ocrepeira is an available name, and the identity of the type species Epeira ectypa Walckenaer, 1841 is not in doubt.
F. P.-Cambridge (1904) synonymized Amamra with Wixia and has been followed by others including Bryant (1936: 329,330 ) and myself (1976), although Bryant questioned this synonymy. The shape of the carapace is a very good generic character in the orb weavers and the carapace shape of Wixia abdominalis differs from that of other species previously placed in the genus (Figs. 5, 6).

Diagnosis. The carapace differs from that of Pozonia and Acacesia (Levi, 1976, fig. 78 ) by being wide in the eye region (Fig. 27), with some exceptions, and differs from that of Wixia by being relatively low, with the clypeus height equal to one or at most two diameters of the anterior median eyes (Fig. 28). The abdomen, unlike that of Parawixia and Wagneriana, has only two anterior humps (with some exceptions), and the attachment of the pedicel, unlike that of Wixia and Pozonia, is at the anterior half of the abdomen (Fig. 40).

The paramedian apophysis of the palpus is a straight rod, as is that of Pozonia, with the tip rounded (Fig. 32), sometimes pointed (Fig. 106), rarely short (PM in Fig. 46). The paramedian apophysis of Wagneriana is L-shaped, and that of Parawixia and Eriophora is enlarged, distal to the conductor, and disk-shaped (Levi, 1991b).

Ocrepeira females have been confused with those of Neoscona (Berman and Levi, 1971, figures 121-124). Differences are that the Neoscona carapace is less sclerotized, with more hair-like setae, the cephalic region is narrower than that of Ocrepeira, and the posterior median eyes face dorsally. Neoscona females can be separated by the oval abdomen from the few Ocrepeira whose eyes face dorsally; Ocrepeira whose eyes face "up" have a shield-shaped abdomen or an oval pattern-less abdomen with a dark frame (Fig. 390). In addition, the venter of the abdomen of Neoscona has two to four pairs of white patches on black, while that of Ocrepeira has only one pair of white patches. African Pararaneus (Grasshoff, 1968) species differ by having only a short lobe on the conductor which might be a paramedian apophysis; the median apophysis has a proximal projection and has the eyes facing dorsally. Its coloration and palpal structures (Grasshoff, 1968) are similar to Ocrepeira's.

Description. The cephalic region is often darker than the thoracic. The sternum may be darker than the coxae or may have some white pigment, the legs are ringed and the pattern on the dorsum of the abdomen is variable among specimens of the same species. In a number of species, however, the anterior part of the abdomen is dark in color to a distinct line between the tubercles (Figs. 148, 189, 357). Many of the species with a light-colored abdomen in alcohol and with few dorsal marks probably are green when alive (as is O. albopunctata). The venter of the abdomen is marked gray to black, frequently with spe-cies-characteristic white spots or patches. This ventral pattern can be used to match males with females.

Two species, $O$. hirsuta and $O$. lapeza, have the sternal color pattern with paired light patches otherwise characteristic of Parawixia. Ocrepeira lapeza (Fig. 343) has paired dark spots on the carapace, as is also characteristic of Acanthepeira and Parawixia species.

Males are usually darker than females, have a darker cephalic region than the female, and often have dark, radiating streaks from the thoracic groove toward the cephalic region (Fig. 368). Males are more likely than females to have white pigment under the sternum and a white cardiac mark on the abdomen.

The carapace is low, the clypeus height equal to one to two diameters of the anterior median eyes. The cephalic region is relatively wide in females. The posterior median eyes are on a swelling, the eyes facing anterolaterally. This posterior median eye position is more pronounced in Ocrepeira than in related genera. However, several species lack this swelling ( $O$. yaelae Fig. 357, O. comaina Fig. 368, O. herrera Fig. 390, O. covilli Fig. 399). These same species have a narrow cephalic region (camaca Fig. 97, yaelae Fig. 357, herrera Fig. 390, covillei Fig. 399). The narrow head and eyes "facing up" is considered as secondary since some species show intermediate stages (gulielmi Fig. 239 , viejo Fig. 384). The genitalia of these species are similar to those of other Ocrepeira. The anterior or posterior median eyes are the largest, the laterals always the smallest. The lateral eyes may be slightly separated from each other. There are some setae on the carapace, usually a bunch of setae above the lateral eyes. The first leg is the longest, the third the shortest. Usually the second leg is slightly longer than the fourth. The abdomen, unlike that of Pozonia, has only two anterior tubercles. These tubercles are rarely absent (comaina Fig. 368, herrera Fig. 390, covillei Fig. 399). Only O. rufa (Fig. 51), O. arturi (Fig. 104), and O. mastophoroides (Fig. 140) have numerous tubercles. It is certain that all O. mastophoroides have these many tu-
bercles, but perhaps only some individuals in O.rufa and O. chickeringi do. Few have an anterior median tubercle (darlingtoni Fig. 332, atuncela Fig. 256). Some have the anterior tubercles projecting, others have them pointing laterally, and in some this character is variable, differing among individuals of the same species. The abdomen is attached slightly vertically to the cephalothorax, the anterior overhang is greater than in species of some other genera, but less than in Wixia and Pozonia.

Males appear similar to females, but have a narrow cephalic region, and a smaller abdomen, with less distinct tubercles. The endite of all males has a tooth facing a tubercle on the proximal end of the palpal femur. The sternum of $O$. covillei has several short macrosetae, but many specimens lack these setae. The first coxa has a hook on the distal margin (Fig. 34); there is a groove on the second femur. The third and fourth coxae frequently have one or more short macrosetae, sometimes on a tubercle. The third and fourth trochanters may also have macrosetae (Fig. 34). These macrosetae are quite variable, often of different number on left and right sides, sometimes absent in individuals of species that have them. The palpal patella of all species has one long macroseta. The second tibia is always thicker than the first, sometimes swollen, bearing sometimes long macrosetae, but never having outgrowths or branches (Fig. 35).

The epigynum is heavily sclerotized with a broad lobe-shaped scape usually attached posteriorly to the base. The scape may be longer than the width of the base (Fig. 29). In posterior view there are median and lateral plates (Fig. 30). The sclerites in posterior view of the epigynum are diagnostic for many species.

The palpus is similar to that of Parawixia (Levi, 1992, figs. 7, 8). It has a large conductor, to which is attached the paramedian apophysis. The paramedian apophysis is of characteristic shape, usually rounded at its distal end with parallel sides. In O. subrufa (Fig. 46), it is a flat,
rectangular extension of the conductor. In O. rufa (Fig. 69) and O. potosi (Fig. 75) it is shoe-shaped, and in others it is a long, tapering, pointed structure (gulielmi Fig. 241, anta Fig. 262, jacara Fig. 364, comaina Fig. 367, heredia Fig. 369, albopunctata Fig. 378, herrera Fig. 391, covillei Fig. 402). In two species the paramedian apophysis is a gutter, a repository for the embolus (abiseo Fig. 319, tina jillas Fig. 327). In most species there is an outgrowth from the radix toward the embolus and the paramedian apophysis, barely visible in some, prominent in others (yaclae Fig. 359, jacara Fig. 364, albopunctata Fig. 377, viejo Fig. 385). Both the paramedian apopysis and the radix outgrowth seem to support the embolus. The median apophysis is always large, often distally forked, and its insertion into the radix is less modified than that of Parawixia and Wagneriana species. The embolus is short and scale-like, or pointed, except in O. magdalena (Fig. 338), which has a long embolus. Emboli are generally similar in related species. Beyond the embolus is a tripartite structure (Fig. 46). While one can call the part closest to the embolus the embolar lamella and the most distal, the terminal apophysis, these parts are difficult to homologize with similar parts in other araneids. The outgrowth of the radix is an autapomorphy. The O. albopunctata and O. viejo embolus has a large, scale-like structure (Fig. 379) that is transferred to the female when mating, and once in the epigynum (on left in Figs. 372,373 ) the scale is difficult to remove. Other species may have a similar, less conspicuous, structure.

Many species with a narrow cephalic region also lack the posterior median eye swelling, have an oval or shield-shaped abdomen, a tapering, pointed paramedian apophysis, and a prominent radix outgrowth. However there is also considerable overlap: not all species with a nairow cephalic region have posterior median eyes facing "up." Other species have a pointed paramedian apophysis, and the outgrowth
from the radix, though less distinct, is found in yet other species.

Relationships. The position of the posterior median eyes, their placement on a slight swelling with the eyes facing sideways to forward is a character shared by the species of the three genera, Wixia, Pozonia, and Ocrepeira. This character is also found in some Parawixia and in Acacesia and is believed a synapomorphy of these groups. In some species of unrelated genera (e.g., Eustala) the posterior median eyes are similarly placed, and in several species of Ocrepeira it appears this peculiar placement of eyes has been secondarily lost. The position of the posterior median eyes, the abdomen shape, and the pointed paramedian apophyses are synapomorphies of Ocrepeira and related genera. The outgrowth of the radix is an autapomorphy of Ocrepeira.

Natural History. Stowe (1978) described a specialized scaffold-like, reduced web for Ocrepeira ectypa. This observation may have been an error, or the observation of a temporary day-time web. All the specimens collected with web notes in vials indicated that the spider had made a complete orb web; the orb is nearly vertical.

Ocrepeira salidito (no. 1139) and $O$. atuncela (no. 173) have a fine-meshed orb with the hub closed; O. lapeza (no. 1491) and O. planada (no. 3347, 3358) have a loose mesh with a wide central hole (Plate 1); they build the orbs at night and the spider rests in the hub face down (Eberhard, voucher numbers of specimens in MCZ and personal communication).

Distribution. Most species are Neotropical and many species come from high elevations in the Andes (Map 3). The Andean species, many isolated from each other, may be very localized and of limited distribution. Species occuring north of Mexico (see Levi, 1976) are O. globosa, O. redempta (see Levi, 1976), Ocrepeira ectypa (Walckenaer, 1841), and Ocrepeira georgia (Levi, 1976), NEW COMBINATION.


Plate 1. Left, Ocrepeira atuncela, horizontal diameter of orb 24 cm . Right, $O$. lapeza, horizontal diameter of orb 18.6 cm (photo W. Eberhard).

Keys. The keys were more difficult to construct than those for species of other genera. Most species are relatively uncommon and few specimens were available. Often, the variability of color patterns or tubercles is unknown. The availability of these features would have simplified the key.

Key to Females of Ocrepeira Species

1. Abdomen with many humps evenly distributed (Figs. 51, 104, 140)
Abdomen with only a pair of anterior tubercles or humps, sometimes an anterior median tubercle (Figs. 39, 44, 63,332 )
2(1). Epigynum as in Figures 137-139; Argentina (Map 5)
mastophoro
Figures 48, 101; Mexico Epigynum as in Figures 48, 101; Mexico and Central America 3
3(2). Epigynum pointed posteriorly in ventral view (Fig. 101); Panama (Map 4) .... arturi

- Epigynum rounded posteriorly in ventral view (Fig. 48); Mexico to Panama (Map 4)
rufa

4(1). Epigynum (base and scape) in ventral and posterior views as long as wide or wider than long (Figs. 71, 72, 302, 303, $322,323,340,341,372,373$ )

- Epigynum (base and scape) longer than wide in ventral and posterior views (Figs. 160, 161, 167, 168)
$5(4)$. Scape forming a lobe of posterior margin of base (Figs. 36, 37, 41, 42, 52, 53, 340, 341)
- $\quad$ Scape set off from base (Figs. 257, 264, 278, 372, 403)
6(5). Scape originating at anterior of base (Figs. 372, 375), posterior view of epigynum as in Figure 373; Guyana, Amazon area (Map 6) albopunctata
- $\quad$ Scape originating on ventral face or posterior of base (Figs. 257, 264, 278, 302, 403)

7(6). Scape longer than wide (Figs. 264, 272, 302)

- Scape as long as or shorter than wide

8(7). In posterior view of epigynum lateral plates touch dorsally (bottom of Fig. 258); Colombia (Map 5) anta

- In posterior view lateral plates separated (Figs. 309, 316); Peru


Map 3. Approximate number of Ocrepeira species in different areas.
$9(8)$. In posterior view median plate overhanging lateral plates (Fig. 404) ..... sorota

- $\quad \ln$ posterior view lateral plates overhanging medians (Figs. 309, 316); Bolivia (Map 6)
10(9). Posterior area of base, behind scape, depressed (Figs. 308, 309); (Map 6) ....... cuy Posterior area of base otherwise (Figs. 315, 316); (Map 6)
abiseo
11(7). Dorsum of abdomen with pairs of black spots having light rings (Fig. 305); Colombian Andes (Map 6) saladito
- Dorsum of abdomen without such spots 12

12(11). Posterior median plate of epigynum subdivided into anterior and posterior plates, anterior one with a median longitudinal groove (Fig. 265); Peru (Map 6) barbara

- Posterior median plate otherwise (Figs. 273, 279, 323)
13(12). Posterior median plate circular (Fig. 273); Ecuador (Map 6)
tungurahua
- Posterior median plate with parallel sides (Fig. 279) or with median constriction (Fig. 323)
14(13). Posterior median plate with sides parallel (Fig. 279); Colombian Andes (Map 6)
valderramai
- Posterior median plate constricted (Fig. 323); Ecuador (Map 6) … tinajilla

15(5). Posterior median plate of epigynum much wider than long (Figs. 37, 42)

- Posterior median plate longer than wide (Figs. 53, 72, 341)

17
16(15). Epigynum in ventral view with a trans-
verse depression (Fig. 36); posterior median plate trapezoidal (Fig. 37); Mexico (Map 4) globosa

- Ventral view of epigynum convex (Fig. 41 ); posterior median plate dorsally rounded, lateral plates extending dorsally beyond median plate (Fig. 42); Mexico, Guatemala (Map 4)
subrufa
17(15). Jamaica (Map 4); epigynum as in Figures

- Mexico, Central and South America 18

18(17). Colombia, epigynum with a small lobe (Figs. 340-342); Colombia (Map 6)
lapeza

- Mexico to Panama (Map 4), epigynum with wide lobe (Figs. 48-50, 52-54, 56-58, 60-62, 64-66)
rufa
19(4). Abdomen oval with indistinct humps and without dorsal folium or transverse streaks (Figs. 390, 399), sometimes with dark dorsal patch (Fig. 400)

20

- Abdomen with a pair of humps or tubercles or with dorsal folium or streak markings

22
20(19). Posterior median plate triangular and with granulated surface (Fig. 388); Peruvian Amazon (Map 6) herrera

- Posterior median plate with a constriction or with sides parallel (Figs. 95, 393)

21(20). Epigynum with long scape as in Figures 392, 39.5, 397; Central America to Amazon area (Map 6)
covillei

- Epigynum with short scape as in Figure 94; Bahia to Paraná States, Brazil (Map 5)
camaca
22(19). Abdomen dorso-anteriorly dark, dark area sharply demarcated at a line extending between tubercles, posterior without folium, sometimes with a dark patch (Figs. 183, 384)
- Abdomen marked otherwise .- 34
$23(22)$. Anterior dark area of abdomen covering anterior pair of muscle scars (Figs. 183, 189,208 )

24

- Anterior pair of muscle scars outside the dark area (Figs. 148, 150, 337)
$24(23)$. Scape laterally flattened or torn off (Figs. 193, 195, 206)
- Scape otherwise ....................... 26

25(24). In posterior view scape (or scar) touching median plate (Fig. 206); Mato Grosso State, Brazil (Map 5)
gima

- In posterior view scape some distance from median plate (Fig. 195); Brazil, Paraguay (Map 5)
fiebrigi
$26(24)$. Sides of scape with median swelling (Fig. 180); southern Brazil (Map 5) ....... malleri
- $\quad$ Sides of scape almost parallel (Figs. 186, 201)

27
27(26). Length of epigynum and scape less than


Map 4. Distribution of Ocrepeira species.
1.5 times its width (Fig. 200); Bolivia, N. Argentina (Map 5)

Length of epigynum more than twice its width (Fig. 186); São Paulo State, Brazil to Buenos Aires Prov., Argentina (Map 5)
galianoae
28(23). Hispaniola (Map 6), epigynum as in Figures 329-331
darlingtoni
Central and South America; epigynum otherwise

29(28). Epigynum large and flat as in Figures 360-362; Peru (Map 6) ......................... Epigynum otherwise (Figs. 143, 354, 380) 30
30(29). Scape with parallel sides (Figs. 354, 380) 31

- Scape tapering or rounded (Figs. 143, 334, 348)

32
31(30). Scape smooth, posterior view of epigynum as in Figure 381; Central America, Venezuela to Peru (Map 6) Scape wrinkled, posterior view of epi-


Map 5. Distribution of Ocrepeira species.
gynum as in Figure 355; Ecuador (Map
6)
yaelae

32(30). Epigynum in posterior view with deep pit at ventral end of median plate (center of Fig. 349); Venezuela, Co-
lombia, and Amazon area (Map 6)
maraca
Epigynum without pit (Figs. 144, 335) . . 33
33(32). Sides of scape convex (Fig. 334)
magdalena

- $\quad$ Sides of scape concave (Fig. 143); Minas Gerais State, Brazil to Chile (Map 5) venustula
$34(22)$. Origin of scape on ventral surface of base as in Figures 236, 238, 243, 245, 297, 299

35

- Base gradually narrowing posteriorly into a scape (Figs. 143, 146, 167, 212) ........ 40
35(34). Lateral plates of epigynum in posterior view touching (Figs. 244, 250, 298) ...... 36
- Lateral plates separated by the median plate (Figs. 237, 254, 291)38

36(35). Tubercles of abdomen directed anteriorly (Figs. 246, 252)

- Tubercles of abdomen directed laterally (Fig. 300); Colombia (Map 6) ....... ituango
37(36). Lateral plates of epigynum with median, dorsal projections (Fig. 244); Amazon area, Venezuela (Map 5) ................ steineri
- Lateral plates without such projections (Fig. 250); northeastern Brazil (Map 5) macaiba
38(35). Posterior lateral plates of epigynum (and base) having a lateral anterior-posterior groove (Figs. 237, 238); Colombia, Ecuador (Map 5) ..........................
Base and lateral plates without groove (Figs. 254, 255, 291, 292)

39
39(38). Abdomen with anterior median tubercle (Fig. 256); sides of posterior median plate parallel (Fig. 254); Colombia (Map 5) $\qquad$ atuncela

- Abdomen without median anterior tubercle (Fig. 293) sides of posterior median plate convex (Fig. 291); Colombia, Ecuador (Map 6) $\qquad$ planada
40(34). Epigynum triangular (Fig. 114); posterior median plate bottle-shaped (Fig. 115); Cuba (Map 4) incerta
- Epigynum otherwise ................................. 41

41(40). Tubercles of abdomen pointing anteriorly (Figs. 177, 228, 235)

- Tubercles or humps of abdomen pointing laterally (Figs. 122, 129, 151)
42(41). Posterior base of epigynum grading into broad lobe with median, longitudinal groove (Figs. 174, 218)
- Scape set off from base of epigynum (Figs. 224, 232); Brazil
43(42). Posterior lateral plates separated by median plate (Fig. 225); São Paulo to Rio Grande do Sul States, Brazil (Map 5)
gnomo
- Posterior lateral plates overlapping (Fig. 233); Rio de Janeiro to Rio Grande do Sul States, Brazil (Map 5) ........... lisei
$44(42)$. Posterior lateral plates touching as in Figure 213; Paraná, Rio Grande do Sul

- Posterior lateral plates separated by a median plate (Figs. 175, 219) 45

45(44). Posterior median plate triangular (Fig. 175); Colombia, Ecuador (Map 5) tumida

- Posterior median plate constricted in middle (Fig. 219); Mato Grosso, Goiás States, Brazil (Map 5) ......... bispinosa
46(41). Scape slightly swollen above tip (Figs. 131, 133); Minas Gerais State, Brazil (Map 5)
klossi
- Scape not swollen (Figs. 119, 126, 167) .... 47

47(46). Epigynum subtriangular, lobe with a pocket (Fig. 126); Costa Rica (Map 4) hondura

- Epigynum otherwise (Figs. 88, 143, 160, 167)

48
48(47). Posterior of epigynum with a wide, deep depression behind scape (Fig. 168); Panama (Map 4) ... willisi
Epigynum without such a depression, or with a narrow pit (Figs. 120, 144, 161) 49
49(48). Abdomen with a pair of white squares their diameter apart on underside (Fig. 82); West Indies (Map 4) .... ... ... serrallesi

- Abdomen otherwise or with a pair of white spots (Fig. 164) ....... ... ......... .. 50
50(49). Mexico (Map 4); epigynum as in Figures 88-90
redempta
- South America 51
$51(50)$. Ventral view of epigynum with a bulge on each side, scape behind bulge hardly longer than length of base above bulge (Figs. 119-121); southern Brazil, Paraguay, northern Argentina (Map 5)


## hirsuta

- No bulges on sides of epigynum (Fig. 160 ), or if bulges, scape behind bulge longer than length of base (Fig. 143)
52(51). Posterior median plate vase-shaped (Fig. 161); Bolivia to Buenos Aires Prov., Argentina (Map 5) lurida
- Sides of posterior median plate almost parallel, sometimes slightly constricted (Figs. 144, 146); Minas Gerais, Brazil to Chile (Map 5) ... venustula

Key to Males of Ocrepeira Species
Ocrepeira verecunda from Colombia (Figs. 155, 156) is not included in the key.

1. Median apophysis of palpus (Figs. 32, 33, $M$ in 46,47 ) with two prongs of equal length or "lower" one longer than "upper." Length of one of the prongs at least one quarter length of median apophysis (Figs. 223, 231, 242, 248, 263, 270, 277, 283, 288, 296, 306, 307. $314,320,328,333$ )

- Median apophysis with one prong or "lower" one much shorter than "upper" (Figs. 46, 47, 100, 109), or prongs very short or absent (Figs. 285, 353)

16

2(1). West Indies (Map 6); palpus as in Figure 333 darlingtoni

- South America; palpus otherwise 3
3(2). Palpus as in Figures 247, 248; Amazon area, Venezuela (Map 5) .......... steineri
- Palpus otherwise; Andes to Brazil $\quad . . . . .$.

4(3). Brazil
Andes ........................ 6
$5(4)$. Base of median apophysis with two parallel lengthwise, curved ridges (Figs. 230, 231); São Paulo to Rio Grande do Sul States (Map 5) ............................
Base of median apophysis with one "vertical" ridge (Figs. 222, 223); Mato Grosso, Goiás States (Map 5) ...... bispinosa
6(4). Palpus in ventral view with lower prong about twice as long as upper prong (Figs. 287, 288, 306, 307)
Prongs of more equal length (Figs. 262, $263,277,319,320,327,328) \ldots$.
7(6). "Upper" prong short, blunt (Figs. 306, 307); Colombia (Map 6) ........ saladito
"Upper" prong long, acute (Figs. 287, 288); Peru (Map 6) ................................

8(6). "Upper" prong at its origin wider than "lower" prong; palpus as in Figures 262, 263; Colombia (Map 5) ..........anta
Prongs of equal width or "lower" prong wider (Figs. 242, 270, 277, 283, 296, 314, 319, 328)
$9(8)$. "Lower" edge of median apophysis with a proximal bulge (Figs. 313, 319, 327)

- "Lower" edge of median apophysis without bulge (Figs. 241, 269, 276, 282, 295)
$10(9)$. Base of median apophysis with a semicircular offset (Fig. 313); Peru ......cuy
- Base of median apophysis otherwise (Figs. 319, 327)
11(10). Base of median apophysis with a triangular offset (Fig. 319) .......................abiseo
Base of median apophysis with little sculpturing (Fig. 327) .........tinajillas
12(9). Base of median apophysis with a semicircular offset (Figs. 276, 295) _. 13
Base of median apophysis otherwise (Figs. 241, 269, 282)
13(12). Prongs of median apophysis long (Figs. 295, 296)
planada
Prongs of median apophysis short (Figs. 276, 277) tungurahua
14(12). Base of median apophysis with a triangular offset (Fig. 282) .... valderramai
Base of median apophysis otherwise (Figs. 241, 269)

15
15(14). Base of median apophysis with boomer-ang-shaped offset (Fig. 269) macintyrei Base of median apophysis with a "diagonal" ridge (Fig. 241) gulielmi
16(1). Median apophysis "higher" than long as in Figures 338, 3.39; northern Colombia (Map 6) magdalena
Median apophysis otherwise (Figs. 184, 284, 352)

17(16). Embolus thread-shaped (Fig. 216); Peru (Map 6) maltana

- Embolus various shapes, never threadshaped

18
18(17). Median apophysis with a narrow neck and dark round spot in its base (Fig. 359); Ecuador (Map 6) ................... yaelae

- Median apophysis otherwise ....... 19

19(18). Terminal apophysis surrounding minute conductor; terminal apophysis in submesal view larger than conductor (Fig. 385): Central and South America (Map 6)
viejo

- Terminal apophysis and conductor otherwise

20
20(19). Median apophysis with a distal notch (Figs. 210, 285, 353, 365, 369, 370, 377, 378)

21

- Median apophysis without notch (Figs. 47, 93, 141)

26
21(20). Distal notch of median apophysis narrow and with parallel sides (Fig. 285); Ecuador (Map 6)
jamora

- Distal notch shallow or triangular (Figs. $210,353,378$ ) ... ................................ 22
22(21). Palpus as in Figures 369, 370; Central America (Map 6) .........................
- Palpus otherwise ... 23

23(22). Terminal apophysis large and overhanging conductor as in Figures 210, 211
gima

- Terminal apophysis otherwise ............ 24

24(23). Terminal apophysis small and pointed as in Figure 352
maraca

- Terminal apophysis otherwise ........ 25

25(24). Terminal apophysis surrounding conductor as in Figures 364, 365 ...........acara

- Terminal apophysis pincer-shaped as in Figure 377 ...............lbopunctata
26(20). Median apophysis having a long tubeshaped (with parallel sides) pointed projection or two with "upper" one longer (Figs. 47, 70, 76, 87, 93, 100, $107,109,112,306,307$ )
Median apophysis otherwise (Figs. 141, $142,172,173$ )

36
27(26). Palpus as in Figures 99, 100; Paraná State,


- Palpus otherwise; Colombia, Mexico, Central America, West Indies ........... 28
28(27). Palpus as in Figures 306, 307; Colombia saladito
- Palpus otherwise; Mexico, Central America, West Indies29

29(28). Paramedian apophysis shoe-shaped (Figs. 69, 75)

30

- Paramedian apophysis otherwise _ 31
$30(29)$. Prong of median apophysis thick as in Figures 69, 70 (Map 4)
$r u f a$
- Prong thin and curved "up" as in Figures 75, 76; Mexico (Map 4) potosi
31(29). Prong of median apophysis with a distal bend as in Figures 111, 112; Mexico (Map 4)
yucatan


Map 6. Distribution of Ocrepeira species.

- Prong evenly curved (Figs. 47, 87, 93, 107, 109)
32(31). Prong relatively short, about three times as long as wide (Fig. 47); paramedian apophysis rectangular (PM in Fig. 47); Mexico, Central America (Map 4)
subrufa
- Prong much longer and paramedian apophysis otherwise (Figs. 76, 93, 107, 109)

33(32). Base of median apophysis with an offset area the shape of a semicircle (Fig. 93); Mexico, Guatemala (Map 4) ..... redempta

- Base of median apophysis otherwise ....... 34

34(33). Base of median apophysis with a large offset area the shape of a tooth (Fig 87); West Indies (Map 4) ........... serrallesi

Base of median apophysis otherwise ........ 35
$35(34)$. Terminal apophysis distally forked as in Figure 106; Panama (Map 4) .......... arturi

- Terminal apophysis distally pointed as in Figure 108; Mexico (Map 4) ... pedregal
36(26). Median apophysis short and in submesal view surrounded by the tegulum as in Figure 391; Peru (Map 6) herrera
- Median apophysis longer (Figs. 124, 135, $184,190,198)$
37(36). Median apophysis in ventral view distally with a bulge or keel "above," beyond the tegulum (Figs. 124, 125, 135, 136, 184, 185, 190, 191, 198, 199, 204)
- Median apophysis without bulge or keel (Figs. 142, 153, 158, 166, 179, 211, 346, 386)
38(37). Terminal apophysis overhanging conductor (Figs. 124, 190)
- Terminal apophysis not reaching "top" of conductor (Figs. 135, 184, 198)40

39(38). Terminal apophysis distally rounded, and median apophysis short (Fig. 124); São Paulo State, Brazil, Paraguay, northern Argentina (Map 5)
hirsuta

- Terminal apophysis pointed, median apophysis long (Fig. 190); São Paulo State, Brazil to Buenos Aires Prov., Argentina (Map 5)
galianoae
40(38). Bulge on "upper" margin of median apophysis evenly rounded (Figs. 136, 185)

42

- Bulge on "upper" margin pointed or keelshaped (Figs. 199, 204) ................. 4
41(40) Bulge on "upper" surface of median apophysis keel-shaped (Figs. 198, 199); Amazon to Rio Grande do Sul State, Brazil (Map 5) fiebrigi
Bulge on "upper" margin pointed (Fig. 204); Bolivia, Argentina (Map 5) .... molle

42(40). Median apophysis wide and terminal apophysis as in Figure 184 ........ malleri

- Median apophysis narrow and terminal apophysis as in Figure 135; Minas Gerais State, Brazil (Map 5) ....................
43(37). Terminal apophysis strongly curved and pointed overhanging the conductor as in Figure 210; Mato Grosso State, Brazil (Map 5)
gima
- Terminal apophysis otherwise _... 44

44(43). Terminal apophysis surrounding small conductor as in Figure 385; Costa Rica (Map 6)
viejo

- Terminal apophysis and conductor otherwise

45
45(44). Terminal apophysis small, cone-shaped as in Figure 367; Peru … ........... comaina

- Terminal apophysis otherwise ............ 46

46(45). Terminal apophysis reaching "top" of conductor or overhanging conductor (Figs. 141, 152, 157, 165, 172, 178, 345)

47

- Terminal apophysis barely touching conductor (Figs. 198, 367, 369, 402) 53
47(46). Distal part of terminal apophysis triangular as in Figure 345; Venezuela (Map 6)
aragua
- Terminal apophysis otherwise .......... 48

48(47). Tip of terminal apophysis with upper edge straight as in Figure 172; Panama (Map 4) willisi

- Tip of terminal apophysis with upper edge curved and pointing to median apophysis (Figs. 141, 152, 157, 165, 178)49

49(48). Abdomen with about 14 tubercles (Fig. 140); Argentina (Map 5) mastophoroides

- Abdomen with only an anterior pair of tubercles or humps

50
50(49). Median apophysis with neck, widening towardstip (Figs. 178, 179); Colombia, Ecuador (Map 5) tumida

- Median apophysis otherwise ................. 51
$51(50)$. Median apophysis distally blunt (Figs. 157, 158); Colombia, Ecuador (Map 5)
redondo
- Median apophysis distally pointed (Figs. 153, 166); Brazil, Argentina
52(51). Overhanging portion of terminal apophysis wide as in Figure 152; Minas Gerais State, Brazil to Chile (Map 5)

> venustula

- Overhanging portion of terminal apophysis narrow as in Figure 165; Bolivia to Buenos Aires Prov., Argentina (Map 5)
lurida
53(46). Distal end of terminal apophysis with shallow notch (Figs. 369, 402)
- Distal end of terminal apophysis pointed (Figs. 198, 345, 367)

55
54(53). Distal end of median apophysis prong slightly wider than section immedi-
ately below and prong fairly straight (Fig. 369); Costa Rica (Map 6) .... heredia
Median apophysis with an even taper and bent "up" (Fig. 402); Costa Rica to Amazon area (Map 6) .......... covillei
55(53). Conductor extending above and beyond terminal apophysis (Fig. 198); Amazon to Rio Grande do Sul State, Brazil

Conductor and terminal apophysis tips touching (Fig. 345); Venezuela (Map 6)
aragua

## Ocrepeira globosa (F. P.-Cambridge), new combination <br> Figures 36-40; Map 4

Wixia globosa F. P.-Cambridge, 1904: 486, pl. 46, fig. 4, 9 . Female holotype from Tepetlapa, Guerrero State, Mexico, in BMNH no. 1905.4.28.2811, examined. Roewer, 1942: 882. Bonnet, 1959: 4829. Levi, 1976: 382, figs. 116-120, \& (not figs. 112, 121, 122, ô).

Note. The male for globosa is unknown. Levi (1976) matched the male of rufa with globosa and matched the male of clivosa with rufa on the basis of a dorsal abdominal pattern. But now I find the pattern variable, and am uncertain if the match was correct.

Description. Female from Baja California Sur, Mexico. Cephalic region streaked gray and black on orange, eye tubercle and sides of thoracic region orange. Chelicerae light orange. Labium, endites brown. Sternum dusky orange underlain by white pigment. Coxae light orange; legs dusky orange with indistinct dark rings. Dorsum of abdomen with posterior paired curved black marks (Fig. 39); venter light dusky without marks. Posterior median eyes 1.3 diameters of anterior medians, laterals 0.6 diameter. Anterior median eyes 1.3 diameters apart. Posterior median eyes 2 diameters apart. Ocular quadrangle slightly wider behind than in front. Height of clypeus equal to 2 diameters of anterior median eyes. Abdomen oval, with large coneshaped, forward-pointing tubercles (Fig
39). Total length 6.6 mm . Carapace 3.0 mm long, 2.7 wide, behind lateral eyes 1.6 wide. First femur 3.0 mm , patella and tibia 3.6 , metatarsus 2.2 , tarsus 0.7 . Second patella and tibia 3.4 mm , third 2.1 , fourth 3.4.

Variation. No two epigyna are alike. They vary in the shape of the outline and the extent of the ventral depression (Levi, 1976, figs 116-118; Figs. 36-38). However, all have the wide convex median plate in posterior view (Fig. 37) and a thin ventral posterior lip (Fig. 38). Total length of females 5.0 to 7.8 mm . Figures $36-38$ were made from a female from Baja California Sur.

Diagnosis. As in O. rufa, all females of O. globosa have the clypeus height about equal to 2 diameters of the anterior median eyes, higher than that of most other species. The ventral depression of the epigynum (Fig. 36) and the shape of the posterior median plate (Fig. 37) separate $O$. globosa from O. subrufa (Figs. 41, 42).

Specimens Examined. UNITED STATES KANSAS Bourbon Co: Redfield, 15 Oct. 1963, ¢ (W., J. Ivie, AMNH). TEXAS Dallas Co: Dallas, \&, Whire Creek, Dallas, \& (both S. Jones, MCZ). ARIZONA Cochise Co: South Fork, Cave Creek, Chiricahua Mts., 11 Sept. 1950, $\circ$ (W. J. Gertsch, AMNH). MEXICO Sonora: N end of Sierra de los Ajos, head Canyon de Evans, 28 Aug. 1970, ㅇ (V. Roth, AMNH). Baja California Sur: Sierra de la Laguna, Cañon de la Zorra, 840 m , Paso de Cecilia Selva, \& (M. L. Jiménez, MLJ). Durango: Palos Colorado, 5 Aug. 1947, \& (W. J. Gertsch, AMNH).

## Ocrepeira subrufa (F. P.-Cambridge), new combination

Figures 41-47; Map 4
Wixia subrufa F. P.-Cambridge, 1904: 486, pl. 46, fig. 6, 9 . Female holotype from Chiacam [Depto. Alta Verapaz, 26 km E of Cobán, $700 \mathrm{~m}, 15^{\circ} 34^{\prime} \mathrm{N}$, $90^{\circ} 06^{\prime} \mathrm{W}$, old coffee plantation], Guatemala, in

BMNH, 1904: 486, examined. Roewer, 1942: 882. Bonnet, 1959: 4830.
Wixia sicula F. P.-Cambridge, 1904: 487, pl. 46, fig. 8 , ठ. Male holotype from Teapa, Tabasco State, Mexico, in BMNH no. 1905.4.28.2818, examined. Roewer, 1942: 882. Bonnet, 1959: 4830. NEW SYNONYMY.
Wixia vulcani Kraus, 1955: 25, pl. 4, figs. 72-74, 9. Female holotype from top of San Salvador Volcano, $1,965 \mathrm{~m}$, El Salvador, in SMF, not examined. Brignoli, 1983: 281. NEW SYNONYMY.

Synonymy. The holotype of W. subrufa is damaged by insect pin holes. F. P.-Cambridge did not consider $W$. sicula and $W$. subrufa as belonging together, presumably because they came from different localities and had different dorsal markings. In 1976, I thought erroneously that because of dorsal markings the sicula male must belong to $W$. rufa and the male of $W$. clivosa to W. globosa (Levi, 1976).

The illustration for W. vulcani shows the characteristic features of $O$. subrufa.

Description. Female from Sacatepequez, Antigua, Guatemala. Carapace dark orange-brown with some white setae, sides of thoracic region darkest. Chelicerae, labium, endites orange-brown. Sternum dark orange-brown. Coxae dark orange; legs or-ange-brown with darker rings and patches. Dorsum of abdomen blackish brown anteriorly; posterior with some transverse dark bars; a light line between dark and light areas, and some scattered long black hairs (Fig. 44); venter black with two discrete white spots (Fig. 45). Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior
median eyes their diameter apart. Posterior median eyes 1.4 diameters apart. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to one diameter of anterior median eyes. Abdomen with tubercles directed toward sides (Fig. 44). Total length 7.7 mm . Carapace 3.7 mm long, 3.1 wide, 1.8 wide behind lateral eyes. First femur 3.5 mm , patella and tibia 4.4, metatarsus 2.8, tarsus 1.0 . Second patella and tibia 4.0 mm , third 2.7 , fourth 3.9.

Male holotype of $W$. sicula. Color as in female, but sternum yellow with brown border and abdomen dorsum with a white anterior cardiac mark. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes slightly more than their diameter apart. Posterior median eyes 1.5 diameters apart. Height of clypeus equal to 0.9 diameter of anterior median eye. Third coxa with two macrosetae on right, one on left, fourth with one macroseta. Fourth trochanter with one macroseta. Total length 4.0 mm . Carapace 2.9 mm long, 2.4 wide. First femur 3.1 mm , patella and tibia 3.6, metatarsus 2.1, tarsus 0.9. Second patella and tibia 2.9 mm , third 1.9 , fourth 2.5 .

Note. The male was matched with the female because of similar ventral markings on the abdomen (Fig. 45). One collection has males and females together.

Variation. Total length of females 6.2 to 9.0 mm , of males 4.0 to 6.4 . The male from Guatemala had the ocular quadrangle slightly narrower behind than in front and the carapace 2.7 mm wide, 1.7 behind

Figures 27-35. Ocrepeira morphology. 27-31, female $O$. venustula (Chile). 27, carapace. 28, eye region and clypeus. 29-31, epigynum. 29, ventral. 30, posterior. 31, lateral. 32, 33, male O. venustula (Chile), left palpus pulled apart. 34, 35, male 0. serraliesi. 34, left coxae. 35, left second tibia, ventral.

Figures 36-40. O. globosa (F. P.-Cambridge), female. 36-38, epigynum. 36, ventral. 37, posterior. 38, lateral. 39, dorsal. 40, lateral.

Figures 41-47. O. subrufa (F. P.-Cambridge). 41-45, female. 41-43, epigynum. 41, ventral. 42, posterior. 43, lateral. 44, dorsal. 45, abdomen, ventral. 46, 47, male palpus.

Abbreviations. A, terminal apophysis; C, conductor; M, median apophysis; PM, paramedian apophysis; T, tegulum.

lateral eyes. Figures 41-44 were made from specimens from Sacatepequez, Guatemala, and Figures 46, 47 from the holotype of W. sicula.

Diagnosis. The female can be separated from that of O. globosa (Figs. 36-38) by the sclerotized convex median and lateral plates of the epigynum in posterior view (Fig. 42). The male is separated from others, including O. rufa (Figs. 69-70), by the shape of the median apophysis, and both sexes from $O$. globosa and $O$. rufa in the region by the ventral white spots on black (Fig. 45) on the abdomen.

Natural History. A female was collected in a cloud forest in Chiapas, another in live-oak foliage in Metaquesquitla, Guatemala.

Specimens Examined. MEXICO Chiapas: Chiapas-Oaxaca border, 21 km W Rizo del Oro, along ridge of Cerro Baul, 1,615 m, 6 Sept. 1972, ㅇ (C. Mullinex, CAS). GUATEMALA Jalapa: Mataquesquintla, El Carrizal, 10 Aug. 1982, ㅇ, 7 imm . (FendRenkes, DU). Sacatepequez: Antiqua, Oct. 1965, 9 (N. L. H. Krauss, AMNH); Antigua, 16, 17 Aug. 1947, ô (C., P. Vaurie, AMNH). Quiché: Nebaj, 9, 10 Aug. 1947, 29, ô (C., P. Vaurie, AMNH). PANAMA Chiriquí: El Volcán, 9-14 Aug. 1950, of (A. M. Chickering, MCZ).

## Ocrepeira rufa (O. P.-Cambridge), new combination <br> Figures 48-70; Map 4

Epeira rufa O. P.-Cambridge, 1889: 35, pl. 6, fig. 18, 9. Female lectotype here designated from between El Petén [Depto. El Petén] and Chicoyoito [Chicoyoi, $\left.15^{\circ} 23^{\prime} \mathrm{N}, 90^{\circ} 21^{\prime} \mathrm{W}^{\prime}\right]$, Guatemala, in BMNH no. 1905.4.28.2812-15, examined. Keyserling, 1892: $120, \mathrm{pl} .6$, fig. 88, ㅇ.
Epeira consequa:-O. P.-Cambridge, 1889: 36.
Epeira destricta:-O. P.-Cambridge, 1889, pl. 4, fig. 14 , 9 (not male holotype, fig. 13). Illustrations to go with Epeira consequa.
Amamra bituberosa O. P.-Cambridge, 1889: 55, pl. 3, fig. 11, 9 . Female holotype from Costa Rica, in BMNH, examined. Keyserling, 1892: 45, pl. 2, fig. 27. 9. NEW SYNONYMY.

Amamra gibhifera O. P.-Cambridge, 1894: 137, pl. 18, fig. 10, \&. Two female syntypes from Guerrero, Mexico, in BMINI, examined. NEW SYNONYMY
?Amamra turrigera O. P.-Cambridge, I895: 251, pl.

31, fig. 6. Immature holotype from Chilpancingo, Guerrero State, Mexico, in BMNH, examined. NEW DOUBTFUL SYNONYMY.
Amamra clivosa O. P.-Cambridge, 1898: 270, pl. 36, figs. $1,2, \&$, $\delta$. Female holotype from Amula, Guerrero State, between Tixtla and Chilapa, $6,000 \mathrm{ft}$ [ $2,000 \mathrm{~m}$ ], Mexico, in BMNH, examined. NEW SYNONYMY.
Wixia bituberosa:-F. P.-Cambridge, 1904: 485.
Wixia gibbifera:-F. P.-Cambridge, 1904: 882 Roewer, 1942: 882. Bonnet, 1959: 4829.
Wixia clivosa:-F. P.-Cambridge, 1904: 485, p. 46, fig. 2, ?.
Wixia turrigera:-F. P.-Cambridge, 1904: 486, pl 46, tig. 7, imm. Roewer, 1942: 882. Bonnet, 1959: 4830.

W'ixia rufa:-F. P.-Cambridge, 1904: 486, pl. 46, fig. 5, $\%$.
Aranea consequa:-F. P.-Cambridge, 1904: 518.
Wixia globosa:—Levi, 1976: 382, figs. 121, 122, ơ only, not \&.

Synonymy. The illustrations associated with Epeira consequa by O. P.-Cambridge (1889) are labeled Epeira destricta. The male illustrated by O. P.-Cambridge, 1889 as Epeira destricta (pl. 4, fig. 13) is the holotype of Parawixia destricta, but the illustration of the female is $O, r u f a$. The specimen has been lost since before F. P. Cambridge (1904).

The holotype of Amamra turrigera is immature, has a wide cephalic region as do other Ocrepeira, lacks white spots on the venter of the abdomen, and has posterior dorsal transverse bars on the abdomen as in $O$. rufa; it also has slight bulges on the sides of the abdomen as do some O. rufa, and the abdomen is drawn out anteriorly and projecting as in some other immatures of the genus. I assume it is an immature O. rufa.
F. P.-Cambridge (1904) considered clivosa (Figs. 56-59) and bituberosa (Figs. 64-67) the same species as $O$. rufa but listed them separately. In 1976 I considered the A. clivosa male as belonging to the female of Wixia globosa because of dorsal abdominal coloration. Amamra bituberosa (Figs. 64-67) and A. gibbifera (Figs. 60-63) differ in the shape of the epigynum. They may be a separate species or, much more likely, variations of O. rufa.

Description. Female holotype of Epeira rufa. Carapace dark brown, eye area light-


Figures 48-70. Ocrepeira rufa (O. P.-Cambridge). 48-68, female. 48-50, 52-54, 56-58, 60-62, 64-66, epigynum. 48, 52, 56, 60,64 , ventral. 49, 53, 57, 61, 65, posterior. 50,54,58,62, 66, lateral. 51,55,59,63,67, dorsal. 68, lateral. 48-51, lectotype of rufa (Guatemala). 52-55, (Durango State, Mexico). 56-59, lectotype of clivosa (Guerrero State, Mexico). 60-63, syntype of gibbifera (Guerrero State, Mexico). 64-67, holotype of bituberosa (Costa Rica). 68, (Sonora State, Mexico). 69-70, male left palpus (Durango State, Mexico).

Scale lines. 1.0 mm , genitalia 0.1 mm .
est. Chelicerae orange-brown. Labium brown, endites orange-brown. Sternum orange, border brown. Coxae grayish yellowbrown; legs dark brown with indistinct rings. Dorsum of abdomen well marked with posterior transverse bars whose ends bend anteriorly, sides darker with distinct margin toward dorsum (Fig. 68); venter with white pigment covered by dark. Posterior median eyes 1.2 diameters of anterior medians, laterals 0.8 diameter. Anterior median eyes 2 diameters apart. Posterior median eyes slightly more than two diameters apart. Height of clypeus equal to 2 diameters of anterior median eyes. Abdomen (Fig. 51). Total length 6.5 mm . Carapace 3.2 mm long, 2.5 wide. First femur 3.0 mm , patella and tibia 3.8 , metatarsus 2.2, tarsus 1.1. Second patella and tibia 3.5 mm , third 2.2 , fourth 3.3 .

Male from Encino, Durango, Mexico. Carapace orange with black setae, black clypeus, and a pair of brown patches on cephalic region. Sternum orange underlain by some white pigment. Anterior of abdomen between humps with white cardiac mark. Venter black with white on each side. Posterior median eyes same diameter as anterior medians, anterior laterals 0.6 diameter, posterior laterals 0.6. Anterior median eyes 2 diameters apart. Posterior median eyes 3 diameters apart. Ocular quadrangle wider behind than in front. Height of clypeus 1.4 diameters of the anterior median eye. Third, fourth coxae each with one macroseta. Fourth trochanter with one macroseta. Abdomen with two tubercles. Total length 5.2 mm . Carapace 2.9 mm long, 2.3 wide, 1.2 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.4, metatarsus 1.9 , tarsus 0.7 . Second patella and tibia 2.7 mm , third 1.8 , fourth 2.6. Abdomen about 3.1 mm long.

Note. Males and females are the most often collected species in Mexico and both sexes have similar distribution. But I am still uncertain that they belong together.

Variation. Females are quite variable in markings, shape of the abdomen (Figs. 5I, $55,59,63,67$ ), and outline of the epigy-
num, particularly the width of the scape (Figs. 48, 52, 56, 60, 64). The seminal receptacles were examined and illustrated but no significant differences found. A female from the State of Morelos had the ocular quadrangle wider behind than in front, the clypeus equal to 1.4 diameters of the anterior median eyes, the carapace 2.3 wide, 1.4 wide behind lateral eyes. Males vary in length and thickness of median apophysis, but not in the E-shaped embolus and terminal apophysis (Fig. 69). Total length of females 6.0 to 8.2 mm , of males 4.9 to 6.2 . The female and male from Durango State, Mexico, were illustrated (Figs. 52-55, 69, 70).

Diagnosis. The high clypeus and indistinct ventral markings of the abdomen are similar to those of O. globosa and separate both species from most others. The posterior aspect of the epigynum is similar to that of the West Indian $O$. branta and $O$ serrallesi; however, the ventral outline differs: shorter in O. branta (Fig. 71), longer and with a median groove in $O$. serrallesi (Figs. 78, 83-85). The male is separated from other species by the E-shaped terminal apophysis of the palpus and the shape of the median apophysis, in particular its basal, cone-shaped offset (Figs. 69, 70).

Natural History. Females were collected in pine forest in Chiapas and in oak woodland in Oaxaca.

Specimens Examined. MEXICO Nuevo León: Cerro Potosí, 2,400 m, 4 June 1983, ò (W. Maddison, MCZ). Durango: Encino, 27 July 1947, ô (W. J. Gertsch, AMNH); 16 km W El Salto, 15 July 1964, 오 (J. E. H. M., MCZ); 10 km NE El Salto, 11 Aug. 1947, ¢ (W. J. Gertsch, AMNH). Nayarit: Tepic, 22 Sept. 1953, ô (B. Malkin, AMNH), of (N. Banks, MCZ). Jalisco: El Molino, 10 July 1956, \& (R. Dreisbach, MCZ). Veracruz: Orizaba, 6 July 1963, ㅇ (D. Bixler, MCZ). Hidalgo: Tenango, 5 Oct. 1947, 9 (H. Wagner, AMNH). Distrito Federal: Contreras, $2,600 \mathrm{~m}, 23$ July 1947, 9 (H. Wagner, AMNH). Pucbla: Huauchinango, 7 Oct. 1947, ㅇ (H. Wagner, AMNH); nr. Villa Juarez, 26 Aug. 1946, 2 ô (J. Good-
night, Bordas, AMNH). Morelos: Cuernavaca, Aug. 1944, \&, July 1965, ¢ (N. L. H. Krauss, AMNH). Oaxaca: Monte Alban ruin, $17^{\circ} 02^{\prime} \mathrm{N}, 96^{\circ} 47^{\prime} \mathrm{W}, 5$ Aug. 1983, ô (W. Maddison, MCZ); 27 km SW Valle Nacion, $96.4^{\circ} \mathrm{N}, 17.6^{\circ} \mathrm{W}, 24$ June 1983 , ô, 2 imm. (W. Maddison, MCZ); 39 km NW Oaxaca, Hwy. 190, 1,700 m, $96^{\circ} 57^{\prime} \mathrm{N}, 17^{\circ} 17^{\prime} \mathrm{W}, 6$ Aug. 1983, $\%$ (W. Maddison, R. S. Anderson, MCZ). Tabasco: Teapa, ô (BMNH). Chiapas: Grutas de San Cristobal, 16 km SE San Cristobal, Hwy. 190, 27 July 1983, q (W. Maddison, MCZ); 5 km W San Cristobal de las Casas, Hwy. 190, 2,100 m, 2728 July 1983, i (W. Maddison, R. S. Anderson, MCZ). COSTA RICA mr. San José, o (Valerio, MCZ).

## Ocrepeira branta new species <br> Figures 71-74; Map 4

Holotype. Female holotype from Blue Mountains, SW side of Main Range, 3,000-4,000 ft [900-1,200 m], Jamaica, 13 Aug. 1934 (P. J. Darlington), in MCZ . The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace reddish brown with dark gray band across the carapace (Fig. 74). Chelicerae yellowish to dark brown. Labium, endites yellowish to brown. Sternum orange, darkest on sides. Coxae yellowish; legs yellowish, ringed dusky brown. Dorsum of abdomen with white and dark marks (Fig. 74); venter black. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 1.2 diameters apart. Posterior median eyes 2.1 diameters apart. Ocular quadrangle slightly wider than long, wider behind than in front. Height of clypeus equal to one diameter of anterior median eyes. Abdomen narrow, pointed anteriorly (Fig. 74). Total length 6.2 mm . Carapace 2.8 mm long, 2.6 wide, 1.7 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.4 , metatarsus 2.1, tarsus 0.8 . Second patella and tibia 3.3 mm , third 2.1, fourth 3.1 .

Diagnosis. This single specimen differs from $O$. serrallesi by the wider cephalic region, a dark band across the hairy car-
apace (Fig. 74), and in lacking the pair of white spots on the venter of the abdomen. The epigynum, unlike that of $O$. serrallesi, is wider than long (Figs. 71-73).

## Ocrepeira potosi new species <br> Figures 75-77; Map 4

Holotype. Male holotype from road up to microwave tower on Cerro Potosí, $24^{\circ} 52^{\prime} \mathrm{N}, 100^{\circ} 14^{\prime} \mathrm{W}, 2,400$ m, Nuevo León State, Mexico, 4 June 1983 (W. Maddison), in MCZ. The specific name is a noun in apposition after the type locality.
Description. Male holotype. Cephalic region of carapace black; black area touches thoracic groove and has a lobe on each side of cephalic area (Fig. 77), thoracic portion orange. Chelicerae dusky orange. Labium, endites orange. Sternum yellowish underlain by some white pigment. Coxae yellowish, legs with indistinct black rings. Dorsum of abdomen spotted dark and light brown with white cardiac mark framed by black; sides with undulating black line; venter light dusky without marks. Posterior median eyes same diameter as anterior medians, anterior laterals 0.7 diameter, posterior laterals 0.7 . Anterior median eyes their diameter apart. Posterior median eyes slightly less than 2 diameters apart. Ocular quadrangle almost square, slightly wider behind than in front. Height of clypeus equal to 1.5 diameters of anterior median eyes. Palpal patella with one macroseta. Third, fourth coxae each with one macroseta. Third and fourth trochanters with one macroseta. Abdomen with a pair of humps. Total length 5.7 mm . Carapace 2.9 mm long, 2.5 wide, 1.3 wide behind lateral eyes. First femur 3.1 mm , patella and tibia 3.5 , metatarsus 2.0, tarsus 1.1. Second patella and tibia 2.9 mm , third 1.9 , fourth 2.8 .

Note. One of the females cited as $O$. rufa may belong with this male.

Diagnosis. The shape of the median apophysis differs from that of O. rufa (Figs. 69,70 ): the prong is longer (Figs. 75, 76) and there are two knobs on the "lower" edge, where the O. rufa male has an offset cone (Fig. 69).

## Ocrepeira serrallesi (Bryant), new combination Figures 78-87; Map 4

Neoscona vulgaris:-Bryant, 1940: 342; 1945: 380 Misidentification, not Neoscona nautica (L. Koch) Wixia serrallesi Bryant, 1947: 90, figs. 2, 3, \&, ô. Male holotype and female paratype from Mona Island, West Indies, in MCZ, examined. Brignoli, 1983: 281.

Wixia pu jalsi Archer, 1958: 14, figs. 31, 32, 9. Female holotype from Chirivico [Santiago Prov.], Cuba, in AMNH, examined. Brignoli, 1983: 281. NEW SYNONYMY
Wixia vaurieorum Archer, 1966: 131, pl. 2, fig. 10, ¢. Female holotype from Hembra, Golden Grove [?], Jamaica, in AMNH, examined. Brignoli, 1983: 281. NEW SYNONYMY

Note. The epigyna of the types of $W$. pujalsi (Figs. 84, 86) and W. vaurieorum (Fig. 85) have a different outline, especially in ventral view. There are not enough specimens available to decide if this is individual or geographic variation.

Numerous localities in Jamaica have the name Golden Grove.

Description. Female paratype of $W$. serrallesi from type locality. Carapace or-ange-brown. Chelicerae, labium, endites brown. Sternum orange-brown underlain by white pigment. Coxae brown; legs dark brown with light orange rings. Dorsum of abdomen with black marks on gray (Fig. 81); venter black with a pair of rectangular white spots two thirds the distance between epigynum and spinnerets (Fig. 82). Posterior median eyes 0.9 diameter of anterior medians, anterior laterals 0.6 diameter, posterior 0.7. Anterior median eyes slightly less than their diameter apart. Posterior median eyes 1.2 diameters apart. Ocular quadrangle square. Height of clypeus equal to 1 diameter of anterior median eyes. Chelicerae with three teeth on anterior margin, the middle one largest; two teeth on posterior margin. Abdomen with two humps (Fig. 81). Total length 9.0 mm .

Carapace 4.1 mm long, 3.6 wide, 2.1 wide behind lateral eyes. First femur 3.7 mm , patella and tibia 4.7, metatarsus 3.0, tarsus 1.1. Second patella and tibia 4.5 mm , third 2.9, fourth 4.1 . Abdomen 6.7 mm high.

Male holotype of W. serrallesi. Color lighter than in female; sternum orange underlain by white pigment, coxae orange. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart, slightly more than 2 diameters from laterals. Posterior median eyes 2 diameters apart. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 0.9 diameter of anterior median eyes. Chelicerae with four teeth on anterior margin, three on posterior margin. Third, fourth coxae each with one macroseta. Third, fourth trochanters each with one macroseta. Abdomen with humps less distinct than female. Total length 6.3 mm . Carapace 3.2 mm long, 2.7 wide, 1.4 wide behind lateral eyes. First femur 3.6 mm , patella and tibia 3.7, metatarsus 2.3, tarsus 0.9 . Second patella and tibia 3.7 mm , third 2.3, fourth 3.0 . Abdomen 3.6 mm high.

Note. Males and females were collected together.

Variation. Total length of females 5.6 to 10.3 mm , of males 4.8 to 6.4. The epigynum is quite variable in shape (Figs. 78-$80,83-86)$; the few males that are available differ only slightly in the shape of the terminal apophysis. It is not known if this is individual or geographic variation. Figures 78-81 were made from the paratype and Figure 87 was made from the holotype of $W$. serrallesi. Figure 84 was made from the holotype of W. pujalsi, Figures 85, 86 were made from that of $\mathbb{W}$. vaurieorum, and Figure 83 was made from a specimen from Thatch Key, U. S. Virgin Islands. These illustrations show the large variation.


Figures 78-87. O. serrallesi (Bryant). 78-86, temale. 78-80, 83-86, epigynum. 78, 83-85, ventral. 79, 86, posterior. 80, lateral. 81, dorsai. 82, abdomen, ventral. 87, male palpus. 78-80, 81, 87, Mona Island. 83, U.S. Virgin Islands, Thatch Key. 84, Cuba, holotype of pujalsi. 85, 86, Jamaica, holotype of vaurieorum. 87, Mona Island, holotype of serrallesi.

Figures 88-93. O. redempta (Gertsch and Mulaik). 88-92, female. 88-90, epigynum. 88, ventral. 89, posterior. 90, lateral. 91, dorsal. 92, lateral. 93 , male palpus.

Diagnosis. This species has been confused with Neoscona nautica. The posterior median eyes of $N$. nautica are on a relatively flat head and face up, while those of Ocrepeira are on a joint swelling, farther apart and face almost sideways (Fig. 81). Ocrepeira serrallesi differs from O. redempta and $O$. branta by the distinct rectangular white patches on the black underside of the abdomen (Fig. 82), and by the flask-shaped posterior median plate with a narrow, ventral neck (Fig. 79). The median apophysis is more slender than that of $O$. redempta and has a tooth at the widest portion of its base (Fig. 87) and a terminal apophysis as long as high.

Specimens Examined. CUBA Cienfuegos: Topes de Collantes, 17 July 1956, of (C. P. Vaurie, AMNH). Santiago: Loma (Pico) de Gato, Sierra Maestra, 26-28 June 1959, 29 (W. M. Sanderson, AMNH); Sierra de Cobre, 900-1,200 m, 3-7 July 1936, \& (P. J. Darlington, MCZ). Guantanamo: Mts. N Imias, $900-1,200 \mathrm{~m}, 25-28$ July 1936, 29 (P. J. Darlington, MCZ). HISPANIOLA Dominican Republic: Cordillera Central, La Vega, 9 Aug. 1958, of (A. F. Archer, AMNH); in. La Romana, 31 July 1935, 29 , ô (Hassler, AMNH); Mt. Busú, Sierra Martín García, $300-1,300 \mathrm{~m}, 25$ June 1983, ó (G. Flores, A. Gross, MCZ). PUERTO RICO Culebra Isl., 19 July 1965, of (F. Mackenzie, AMNH); Bosque Estadual de Maricao, 23 July 1958, ò (A. F. Archer, AMNH); Desecheo Isl., 28 Mar. 1961, 48 (MCZ), 27-29 May 1965, 8, of, 2 imm (H. Heatwole, AMNH); Muertos Isl., 27-29 May 1959, 39 (Jordan, Martorell, AMNH), 25 June 1959, 28 (AMNH). U. S. VIRGIN ISLANDS Thatch Key, 12 Nov. 1966, of (Univ. Puerto Rico Isl. Proj., AMNH). St. Croix: Christiansted, of (ZMK). St. John: 10-12 July 1958, 69, $2 \delta$ (A. F. Archer, AMNH); nr. Cinnamon and Hart Bays, 14 Aug. 1976, o (D. E., D. N. Rosen, AMNH). BRITISH VIRGIN ISLANDS Cooper Isl., 25 July 1986, of (J. Lazell, J. Bush, USNM); Little Camanoe, 2 July 1965, of (Univ. Puerto Rico Isl. Proj., AMNH); Tortola, Greater Camanoe Isl., 1 July 1965, 9 (Univ.

Puerto Rico Isl. Proj., AMNH). MARTINIQUE Trois Ilets Ansemitan, 10-11 June 1960, imm. (C., P. Vaury, AMNH). GRENADA St. George's, Sept. 1967, of (N. L. H. Krauss, AMNH).

## Ocrepeira redempta (Gertsch and Mulaik), new combination <br> Figures 88-93; Map 4

Aranea redempta Gertsch and Mulaik, 1936: 18, fig. 39, \&. Female holotype from Edinburg, Texas, in AMNH, examined.
Neoscona redempta:-Berman and Levi, 1971: 499, figs. 121-124, 9 .
Description. Female from Sonora, Mexico. Carapace orange with light colored setae, sides of thoracic region brown to black. Chelicerae orange to brown. Labium, endites brown. Sternum orange underlain by white, margin dark. Coxae orange; legs orange with dark rings. Dorsum of abdomen with white, gray, and black marks (Fig. 91); sides with undulating black line (Fig. 92); venter with a pair of light patches on gray (Fig. 92). Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 1.2 diameters apart. Posterior median eyes 2 diameters apart. Ocular quadrangle wider behind than in front. Height of clypeus equal to 1.5 diameters of anterior median eyes. Abdomen as long as wide (Fig. 91). Total length 7.8 mm . Carapace 2.8 mm long, 2.6 wide, 1.4 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.2 , metatarsus 2.0 , tarsus 0.8. Second patella and tibia 3.1 mm , third 2.0 , fourth 3.0 .

Male from Sonora, Mexico. Color as in female. Lateral lines on abdomen indistinct. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes slightly less than their diameter apart. Posterior median eyes 2 diameters apart. Ocular quadrangle wider behind than in front. Height of clypeus equal to 0.8 diameter of anterior median eyes. Third, fourth coxae each with one macroseta. Third and fourth trochanters with one macroseta. Total length 4.4 mm . Carapace 2.7 mm long, 2.3 wide, 1.2 wide
behind lateral eves. First femur 2.9 mm , patella and tibia 3.4, metatarsus 1.6 , tarsus 0.8 . Second patella and tibia 2.7 mm , third 1.8, fourth 2.5 .

Note. Nales and females were collected together.

Variation. Total length of females 5.7 to 7.8 mm , of males 4.4 to 5.0 . Figures 88 92 were made from a specimen from Sonora, Figure 93 from a male from Texas.

Diagnosis. Ocrepeira redempta from Mexico and Central America can be confused with the West Indian O. serrallesi. The ventral white patches on the abdomen are less distinct than in the West Indian species (Fig. 92). The ventral part of the posterior median plate of the epigynum (Fig. 89) differs from that of $O$. serrallesi (Figs. 79, 86) and the median apophysis differs in that the prong is less curved and the widest part above the base has a semicircular offset (Fig. 93)

Specimens Examined. MEXICO Sonora: Minas Nuevas, 8 Aug. 1952, ㅇ, ơ (P., C. Vaurie, AMNH); 16 km W Alamos, 19 July 1954, 2q, ô (W. J. Gertsch, AMNH). San Luis Potosi: hotel, Covadanga, Valles, 1961, \& (L. Steude, AMNH). Nayarit: Tepic, 4 Aug. 1953, of (P., C. Vaurie, AMNH). Baja California Norte: 24 km S Santo Domingo, 4 Oct. 1941, of (E. Ross. Bohart, CAS). Baja Califormia Sur: Comitán, Matorral Sarcocaule, 4 Oct. 1987, \& (M. L. Jiménez, MLJ); Comitán, 2 Sept. 1987, 2ô (M. L. Jiménez, MLJ); 16 km NW La Paz, 6 Oct. 1941, \& (E. Ross, Bohart, CAS). GUATEMALA Ciudad Guatemala, 1.400$1,500 \mathrm{~m}$. June 1981, \& (N. L. H. Krauss, AMNH). HONDURAS Tsecucigajo [?Tegucigalpa], 18 June, of (H. Dybas, AMNH).

## Ocrepeira camaca new species Figures 94-100; Map 5

Holotype. Female holotype from Fazenda São Roque, Camacan [Camacã], Bahia State, Brazil, 2 Dec. 1977 (J. S. Santos), in MCN no. 11044. The specific name is a noun in apposition after the type locality.
Description. Female holotype. Carapace orange, anterior of cephalic area
dusky. Chelicerae orange with a dusky reticulate pattern. Labium, endites orange. Sternum light orange. Coxae light orange, legs with indistinct dusky rings. Dorsum of abdomen with anterior edge black and with paired diagonal black marks on white (Fig. 97); venter dusky with two indistinct white patches (Fig. 98). Cephalic area of carapace unusually narrow. Posterior median eyes 0.7 diameter of anterior medians, anterior laterals 0.7 diameter, posterior 0.6. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 0.8 diameter of anterior median eyes. Abdomen oval without distinct humps (Fig. 97). Total length 9.6 mm . Carapace 4.5 mm long, 4.1 wide, 1.8 wide behind lateral eyes. First femur 4.6 mm , patella and tibia 5.8 , metatarsus 3.9, tarsus 1.3. Second patella and tibia 5.6 mm , third 3.3, fourth 4.9 .

Male from Itamarajú, Bahia, Brazil. Color as in female but some white pigment posteriorly in cephalic area of carapace, and sternum underlain by white pigment. Legs more distinctly ringed than those of the female. Posterior median eyes same diameter as anterior medians, laterals 0.5 diameter. Anterior median eyes 0.6 diameter apart. Posterior median eyes 1.8 diameters apart. Posterior median eyes on swelling. Ocular quadrangle wider behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Palpal patella with one macroseta. Third, fourth coxae each with one macroseta. Third and fourth trochanters each with one macroseta. Abdomen oval without tubercles. Total length 5.4 mm . Carapace 3.1 mm long, 2.9 wide, 1.6 wide behind lateral eyes. First femur 3.4 mm , patella and tibia 4.2 , metatarsus 2.6, tarsus 0.9. Second patella and tibia 3.9 mm , third 2.3, fourth 3.0 .

Note. Males and females were collected at the same locality, and have a similar abdomen. But the eyes differ: those of the male have the posterior median eyes on a larger swelling that those of the female.

Variation. Total length of females 11.3 to 9.6 mm . The female from Curitiba has no white spots on the venter of the abdomen, has eyes on a swelling, and has the scape of the epigynum torn off. Figures 94-98 were made from the holotype, and Figures 99, 100 from a male from Itamarajú.

Diagnosis. The shape of the epigynum (Figs. 94-96) and the median apophysis of the palpus (Figs. 99, 100) resemble that of the West Indian O. serrallesi (Figs. 7887), and differ from all other Brazilian species.
Records Examined. BraziL Bahia: Fazenda N. S. Neves, Itamarajú, 9 Oct. 1978, ? ? ô (J. S. Santos, MCN 10324, 11018). Paraná: Curitiba, 1945, \& (Gengnagel, MZSP 9647).

## Ocrepeira arturi new species Figures 101-107; Map 4

Holotype. Female holotype and one male and one immature paratype from Barro Colorado Island, Lago Gatún, Panamá Prov., Panama, May 1964 (A. M. Chickering), in MCZ. The species is named after the collector.
Description. Female holotype. Carapace orange. Chelicerae, labium, endites orange. Sternum orange, underlain by some white pigment. Coxae, legs orange. Dorsum of abdomen white, gray, and black (Fig. 104); venter black with a pair of white spots (Fig. 105). Posterior median eyes 1.1 diameters of anterior medians, anterior laterals 0.8 diameter, posterior laterals 1 diameter. Anterior median eyes 1.7 diameters apart. Posterior median eyes 2.5 diameters apart. Ocular quadrangle wider behind than in front. Height of clypeus equal to 1.7 diameters of anterior median eyes. Abdomen with an anterior median
hump in addition to the anterior lateral ones, and two pairs of swellings on sides (Fig. 104). Total length 7.2 mm . Carapace 3.5 mm long, 3.2 wide, 1.8 wide behind lateral eyes. First femur 4.0 mm , patella and tibia 4.5 , metatarsus 2.9, tarsus 1.1. Second patella and tibia 4.3 mm , third 2.7 , fourth 3.9. Abdomen 5.5 mm long.

Male paratype. Color as in female, but legs with darker orange rings. Posterior median eyes same diameter as anterior medians, laterals 0.6 diameter. Anterior median eyes 0.7 diameter apart. Posterior median eyes two diameters apart. Ocular quadrangle slightly wider behind than in front. Height of clypeus equal to 1 diameter of anterior median eves. Third, fourth coxae each with one macroseta. Third, fourth trochanters with one macroseta. Abdomen with anterior median tubercle. Total length 6.2 mm . Carapace 3.8 mm long, 3.5 wide, 1.8 wide behind lateral eyes. First femur 4.4 mm , patella and tibia 5.1, metatarsus 2.9 , tarsus 1.1. Second patella and tibia 4.7 mm , third 2.7 , fourth 3.8. Abdomen 4.5 mm long.

Note. Males and females were collected together.

Diagnosis. Ocrepeira arturi differs from most Ocrepeira species by having an anterior median hump and humps all around the abdomen (Fig. 104). The epigynum (Figs. 101-103) can be confused with that of O. serrallesi (Figs. 78-86). The male palpus has differently shaped median and terminal apophyses (Figs. 106, 107) from those of O. serrallesi (Fig. 87).

## Ocrepeira pedregal new species Figures 108-110; Map 4

Holotype. Male holotype from Pedregal, Distríto Federal, Mexico, 8 Aug. 1947 (H. Wagner), in

Figures 94-100. Ocrepeira camaca n. sp. 94-97, female. 94-96, epigynum. 94, ventral. 95, posterior. 96, lateral. 97, dorsal. 98 , abdomen, ventral. 99,100 , left male palpus.

Figures 101-107. O. arturi n. sp. 101-105, female. 101-103, epigynum. 101, ventral. 102, posterior. 103, lateral. 104, dorsal. 105, abdomen, ventral. 106, 107, male palpus.


Figures 108-110. O. pedregal n. sp., male. 108, 109, palpus. 110, dorsal.
Figures 111-113. O. yucatan n. sp., male. 111, 112, palpus. 113, dorsal.
Scale lines. 1.0 mm , genitalia 0.1 mm .

AMNH. The specific name is a noun in apposition after the type locality.
Description. Male holotype. Carapace with an orange band, band wider in front than behind, carapace brown in thoracic region. Chelicerae, labium, endites orange. Sternum orange, underlain by some white pigment. Coxae orange, legs orange-brown with indistinct darker rings. Dorsum of abdomen with white cardiac mark and black outline of a folium (Fig. 110). Venter with a white transverse rectangle between genital groove and spinnerets. Posterior median eyes 1.1 diameters of anterior medians, laterals 0.7 diameter. Anterior median eyes 1.7 diameters apart. Posterior median eyes 1.8 diameters apart. Lateral eyes their radius apart. Ocular quadrangle square. Height of clypeus equal to 1.3 diameters of anterior median eyes. Third, fourth coxae each with one macroseta. Third, fourth trochanters each with one macroseta. Abdomen with two anteriorly directed tubercles (Fig. 110). Total length 5.2 mm . Carapace 2.7 mm long, 2.3 wide, 1.2 wide behind lateral eyes. First femur 3.0 mm , patella and tibia 3.4, metatarsus 1.9 , tarsus 0.7 . Second patella and tibia 2.7 mm , third 1.8, fourth 2.5. Abdomen 3.1 mm long.

Variation. Total length of males 5.2 to 5.6 mm . The illustrations were made from the holotype.

Diagnosis. Ocrepeira pedregal differs from O. yucatan, O. rufa, and other males found in Mexico by the shape of the median and terminal apophyses and the knifeshaped paramedian apophysis (Figs. 108, 109).

Specimens Examined. MEXICO Michoacan: 16 km S Uruapan, 6 July 1985, ô (Woolley, Zolnerwich, DAD). NICARAGUA 5 km N Matagalpa, I5 July 1989, ô (R. Reinbold, JMM).

## Ocrepeira yucatan new species Figures 111-113; Map 4

Holotype. Mate holotype from Piste, Yucatan, Mexico, 4-8 June 1959 (С., P. Vaurie), in AMNH. The specific name is a noun in apposition after the type locality

Description. Male holotype. Carapace orange with white pigment in middle. Clypeus black, sides of thoracic region with some white down-like setae. Chelicerae, endites, labium dusky orange. Sternum orange underlain by some white pigment. Coxae light orange; legs light orange with black rings. Abdomen black anterior to a white line between tubercles, black outline of folium posteriorly (Fig. 113); venter with a pair of white patches on black. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.8 diameters apart. Ocular quadrangle square. Height of clypeus equal to 1.2 diameters of anterior median eyes. Third, fourth coxae each with one macroseta. Third and fourth trochanters with one macroseta. Abdomen ovoid with tubercles minute (Fig. 113). Total length 5.0 mm . Carapace 3.3 mm long, 3.0 wide, 1.3 wide behind lateral eyes. First legs lost. Second patella and tibia 3.6 mm , third 2.2, fourth 3.1.

Diagnosis. Ocrepeira yucatan differs from other species by having small abdominal tubercles, light colored carapace, white patches on venter, and median apophysis with a long, distally turned "up" prong (Figs. 111, 112).

## Ocrepeira incerta (Bryant), new combination

Figures 114-118; Map 4
Wixia incerta Bryant, 1936: 328, pl. 23, figs. 6, 8, ㅇ. Three female syntypes from Sierra del Cobre, Loma del Gato, 2,600-3,325 ft [790-1,000 m], Cuba, in MCZ, examined. Roewer, 1942: 882. Bonnet, 1959: 4829.

Description. Female syntype. Carapace orange with almost circular brown cap; area between median and lateral eyes brown. Chelicerae brown. Labium, endites yellow to brown. Sternum light yellowish with dark margin. Coxae light yellowish; legs yellowish with brown rings. Dorsum of abdomen white and black with posterior transverse bars (Fig. 117); venter dusky with a pair of large white patches anterior to spinnerets. Anterior median
eyes 1.5 diameters apart, 2.5 diameters from laterals. Posterior median eyes 1.5 diameters apart, slightly more than 3 from laterals. Posterior median eyes on swelling. Ocular quadrangle square. Height of clypeus equal to 0.8 diameter of anterior median eyes. Abdomen with two large tubercles and a minute anterior median one (Fig. 117). Total length 4.3 mm . Carapace 1.8 mm long, 1.7 wide, 1.2 wide behind lateral eyes 1.2 wide. First femur 2.0 mm , patella and tibia 2.3, metatarsus 1.4, tarsus 0.6. Second patella and tibia 2.1 mm , third 1.2, fourth 1.7. Abdomen 3.1 mm high.

Variation. Total length of females 3.8 to 5.4 mm . Some specimens have a longer scape of the epigynum or have a longer abdomen than others (Fig. 118). The specimens from Pico Turquino have a dark sternum and lack dark rings on legs. Figures 114-117 were made from a syntype and the abdomen (Fig. 118) from a specimen from Pico Turquino.

Diagnosis. This species differs from all others by the triangular epigynum (in ventral view, Figs. 114, 115) and the flaskshaped outline of the median plate in posterior view (Fig. 115).

Specimens Examined. CUBA Santiago: Sierra del Cobre, 900-1,200 m, 3-7 July 1936, \& (P. J. Darlington, MCZ); Pico Turquino, 1,800 m, 16-21 June 1936, 9 (P. J. Darlington, MCZ); S side Pico Turquino, $900-1,500 \mathrm{~m}$, June 1936, 오 (P. J. Darlington, AMNH); La Majagua, El Cardero, Pico Turquino, Mar. 1980, $\&$ (G. Alayón, A. Valdés, IESC).

## Ocrepeira hirsuta (Mello-Leitão), new combination

Figures 119-125; Map 5
Epeira venustula:-Keyserling, 1892: 128, pl. 6, \&, ठ. Not E. venustula Keyserling, 1880, misidentification (see $O$. venustula below).
Eustala hirsuta Mello-Leitão, 1942: 400, figs. 16-18, 8. Male holotype from Tirol, Chaco Prov., Argentina, in MLP, examined. Brignoli, 1983: 269.
Description. Female from Chaco, Paraguay. Carapace yellowish, cephalic region orange with white setae, sides of cephalic region and area between eyes dark
brown; a dark brown patch on each side behind cephalic region (Fig. 122). Chelicerae dusky brown, orange proximally. Labium, endites brown. Sternum dusky with five orange patches, yellow behind labium. Coxae yellow; legs yellow, ringed dark brown. Anterior of dorsum of abdomen dark to a line between tubercles; posterior with a lyre-shaped mark (Fig. 122); venter gray with a pair of white spots (Fig. 123). Posterior median eyes 0.9 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 1.1 diameters apart, 2.5 diameters from laterals. Posterior median eyes 1.2 diameters apart, almost 4 diameters from laterals. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen with distinct humps (Fig. 122). Total length 6.4 mm . Carapace 3.4 mm long, 2.5 wide, 1.6 wide behind lateral eyes. First femur 2.5 mm , patella and tibia 3.2, metatarsus 2.0 , tarsus 0.9 . Second patella and tibia 3.1 mm , third 1.9 , fourth 2.9.

Male holotype of Eustala hirsuta. Color as in female but dorsum of abdomen with brown chevrons. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes slightly more than their diameter apart. Third and fourth coxae with one macroseta. Fourth trochanter with one macroseta. Abdomen oval. Total length 5.8 mm . Carapace 3.0 mm long, 2.6 wide. First femur 2.8 mm , patella and tibia 3.6 , metatarsus 2.0, tarsus 0.8 . Second patella and tibia 2.8 mm , third 2.1, fourth 3.0.

Note. Males and females were repeatedly collected together.

Variation. Total length of females 6.4 to 8.2 mm , of males 4.5 to 5.8 . A male from Rio Grande do Sul had the ocular quadrangle narrower behind than in front, the height of the clypeus equal to the diameter of the anterior median eyes, the carapace 2.4 mm wide, 1.3 wide behind lateral eyes. Some females have the sternum colored as in Parawixia (Levi, 1992, fig. 6) with pairs of light colored patches.

All illustrations were made from specimens from Chaco, Paraguay.

Diagnosis. The epigynum, in ventral view, unlike that of other species, has a small lobe on each side (Fig. 119), and has a distinct constriction of the median plate in posterior view (Fig. 120). The palpus differs by the shape of the median apophysis (Figs. 124, 125).

Natural History. One female from Curitiba was observed making an orb in the grass at sunset.

Specimens Examined. BRAZIL Paraná: Curitiba, 3 Feb. 1988, ¢ (R. L. C. Baptista, RLCB); Rôlandia, 1948, \& (A. Maller, AMNH). Rio Grande do Sul: Guaíba, 8 Feb. 1980, ㅇ (H. A. Gastal, MCN 9224); Parque Estadual de Nonoai, Nonoai, 13 Jan. 1985, of (A. A. Lise, MCN 12910); São Leopoldo, 19 June 1965, 6क, ô (C. Valle, MZSP 4887); Serro Claro, São Pedro do Sul, 10 Jan. 1985, 16오, 8̂̊, imm. (A. A. Lise, MCN 13001). PARAGUAY Alto Paraná: Taguararapa, 7오, ô (AMNH), 1-6 Sept. 1982, 7̊ 오 ô (J. A. Kochalka, IRNP); SE Nararyal [?], 18-22 Aug. 1988, ô (L. Peña, AMNH). Chaco: Parque Nacional Defensores, Misión Cué, Tribu Nueva, 1-3 Sept. 1982, 7오, 2ô (J. A. Kochalka, IRNP). Itapúa: Autidia Matiauda, 20 km NE Puerto Capitán Meza, Mar. 1984, ơ (L. Fogarty, MCZ). ARGENTINA Misiones: Eldorado, Sept.-Nov. 1964, 2 ( A. Kovacs, AMNH); Puerto Aguirre, 1943, \& (J. M. Siana, MACN). Salta: Zuviria, Dec. 1907, 오, $\boldsymbol{\delta}$ (E. Reimoser, MCZ). Santa Fé: San Javier, Feb. 1964, ô (M. E. Galiano, MEG).

## Ocrepeira hondura new species Figures 126-130; Map 4

Holotype. Female holotype from Bajo Hondura [ $\left.10^{\circ} 09^{\prime} \mathrm{N}, 83^{\circ} 55^{\prime} \mathrm{W}\right], 1,200 \mathrm{~m}$, San José Prov., Costa Rica, Nov. 1987 (W. Eberhard), in MCZ. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange, sides with a wide brown band broken behind posterior median eyes. Chelicerae, labium, endites brown. Sternum white with a brown rim. Anterior two pairs of coxae brown, posterior two yellowish; legs yellowish with dark rings and patches. Dorsum of abdomen with dark marks on anterior side of each tubercle, posterior with transverse dark bars (Fig. 129); venter black with a pair of white spots (Fig. 130). Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes 2 diameters apart. Ocular quadrangle almost square, very slightly wider behind. Height of clypeus equal to 1 diameter of anterior median eye. Abdomen with a pair of tubercles (Fig. 129). Total length 8.2 mm . Carapace 3.4 mm long, 2.7 wide, 2.0 wide behind lateral eyes. First femur 3.1 mm , patella and tibia 3.8, metatarsus 2.0, tarsus 0.9. Second patella and tibia 3.6 mm , third 2.2, fourth 3.4 . Abdomen 5.7 mm long.

Diagnosis. The triangular epigynum differs from all others by the small pocket at the tip (Fig. 126) and the shape of the posterior median plate (Fig. 127).

## Ocrepeira klossi new species <br> Figures 131-136; Map 5

Holotype. Female holotype from Serro do Caraça, Minas Gerais State, $20^{\circ} 08^{\prime} \mathrm{S}, 43^{\circ} 30^{\prime} \mathrm{W}$, Brazil, 1223 Nov. 1961 (U. Martins, K. Lenko, R. Kloss), in MZSP no. 6710. The species is named after one of the collectors.

Description. Female holotype. Carapace orange. Chelicerae, labium, endites orange. Sternum orange. Coxae orange; legs orange. Dorsum of abdomen white (Fig. 134); venter without pigment except for two white pigment patches and white


Figures 126-130. O. hondura n. sp., female. 126-128, epigynum. 126, ventral. 127, posterior. 128, lateral. 129, dorsal. 130, abdomen, ventral.

Figures 131-136. O. klossi $\mathrm{n} . \mathrm{sp} .131$-134, female. 131-133, epigynum. 131, ventral. 132, posterior. 133, lateral. 134, dorsal. 135,136 , male palpus.

Scale lines. 1.0 mm , genitalia 0.1 mm .
streaks on sides. Posterior median eyes same diameter as anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.4 diameters apart. Ocular quadrangle almost square. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen with lateral tubercles (Fig. 134). Total length 10.0 mm . Carapace 3.7 mm long, 3.1 wide, 1.8 wide behind lateral eyes. First femur 3.4 mm , patella and tibia 4.0 , metatarsus 2.7, tarsus 1.0. Second patelia and tibia 3.9 mm , third 2.5 , fourth 3.6 .

Male paratype. Color as in female but legs with indistinct darker rings and abdomen with anterior black with a white cardiac mark, posterior with a black outline around a dark folium. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.7 diameter apart. Posterior median eyes their diameter apart. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1 di ameter of anterior median eyes. Third, fourth coxae each with one macroseta. Third and fourth trochanters each with one macroseta. Total length 6.0 mm . Carapace 3.3 mm long, 2.7 wide, 1.2 wide behind lateral eyes. First femur 3.4 mm , patella and tibia 3.9, metatarsus 2.3, tarsus 0.9 . Second patella and tibia 3.2 mm , third 2.0, fourth 3.1.

Note. It is uncertain if male and female belong together; they were matched on account of similar size of the carapace and proximate collecting localities.

Diagnosis. The epigynum of this species has a scape that is constricted anteriorly (Fig. 131) and is relatively thick (Fig. 133). The male has a unique median apophysis with a slight swelling on its "upper" side (Fig. 136).

Paratype. BRAZIL Minas Gerais: Lagoa Santa, 26 Nov. 1960, ô (C. Araújo, Martina, MZSP 7960).

## Ocrepeira mastophoroides (Mello-Leitão), new combination

Figures 137-142; Map 5
Parawixia mastophoroides Mello-Leitão, 1942: 402, figs. 23, 24, \&. Female holotype from Quimilí, Santiago del Estero Prov., Argentina, in MLP, examined. Brignoli, 1983: 279.

Description. Female specimen from Córdoba, Argentina. Carapace orangebrown with black band across cephalic region, and clypeus black. Chelicerae dark orange. Labium, endites orange. Sternum light orange with dusky around border. Coxae light orange; legs orange, contrastingly ringed with gray to black. Dorsum of abdomen black, white, and brown (Fig. 140); venter, with white pigment between epigynum and spinnerets. Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior median eyes 1.1 diameters apart, 2.5 diameters from laterals. Posterior median eyes 2 diameters apart, 3.5 diameters from laterals. Ocular quadrangle slightly wider behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen with five pairs of tubercles, the anterior lateral double (Fig. 140). Total length 6.6 mm . Carapace 3.2 mm long, 2.3 wide, 1.6 wide behind lateral eyes. First femur 2.9 mm , patella and tibia 3.4 , metatarsus 2.1, tarsus 0.9. Second patella and tibia 3.2 mm, third 2.0, fourth 3.2.

Male specimen from La Rioja Prov., Argentina. Color darker and more contrasting than in female. Sides of thorax orange, cephalic area black. Sternum with white pigment, abdomen with white cardiac mark, and venter with a pair of indistinct white spots in front of spinnerets. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.6 diameter apart, less than 2 diameters from laterals. Posterior median eyes 0.8 diameter apart, about 3.5 diam-


Figures 143-154. O. venustula (Keyserling). 143-151, females. 143-147, epigynum. 143, ventral. 144-146, posterior. 147, lateral. 148, 150, 151, dorsal. 149, abdomen, dorsal. 152-154, palpus. 143, 144, 147, 148, 152, 153, (Minas Gerais State, Brazil) 150, (Rio Grande do Sul State, Brazil). 146, 151, (Santa Catarina State, Brazil). 145, 149, 154 (Cautin Prov., Chile).

Figures 155, 156. O. verecunda (Keyserling), male palpus (from Keyserling, 1892).
Figures 157-159. O. redondo n. sp., male. 157, 158, palpus. 159, dorsal.
Scale lines. 1.0 mm , genitalia 0.1 mm .
eters from laterals. Ocular quadrangle square. Height of clypeus equals to 1.5 diameters of anterior median eyes. Third and fourth coxae with a macroseta. Fourth trochanter with one macroseta. Abdomen with tubercles as in female. Total length 5.6 mm . Carapace 2.9 mm long, 2.4 wide, 1.3 wide behind lateral eyes. First femur 3.1 mm , patella and tibia 3.6 , metatarsus 2.1, tarsus 0.9. Second patella and tibia 3.1 mm , third 2.1, fourth 3.0.

Note. Males and females were matched by the shape of their abdomen.

In the Paris museum is an immature individual marked "Ar. bergi Simon" from Uruguay (MNHN No. 5490), a nomen nudum, a name never published.

Variation. The holotype is much larger than the specimens described here. Total length of the female 10.0 mm , carapace 4.0 mm long, 3.0 wide and first patella and tibia 4.0 mm . The illustrations were made from a female from Córdoba Prov. and from a male from La Rioja Prov., Argentina.

Diagnosis. Both males and females can be separated from all other South American species by tubercles around the abdomen (Fig. 140). The female is distinguished by the shape of the posterior median plate of the epigynum (Fig. 138) and the male by the long projecting median apophysis of the palpus (Fig. 142).

Specimens Examined. ARGENTINA La Rioja: Pozo de Piedra, 6 km E Chepes, 7 Jan. 1980, 2 ®̂ (R. E. Woodruff, L. A. Stange, FSCA). Entre Ríos: Concepción del Uruguay, 4 Jan. 1941, o (R. F. Prosen, MLP). Córdoba: Calamuchita, Dec. 1941, o (J. M. Viana, MACN).

## Ocrepeira venustula (Keyserling), new combination

Figures 29-33, 143-154; Map 5
Epeira venustula Keyserling, 1880: 308, pl. 4, fig. 11, ? Female holotype from Nova Friburgo [Rio de Janeiro State], Brazil, in the L. Koch collection, lost. Aranea venustula:-Roewer, 1942: 856.
Araneus venustulus:-Bonnet, 1955: 628.
Note. The original specimen of E. venustula is lost. The measurements and de-
scription of Keyserling (1880) fit this common species best. However, three female, two male, and two immature specimens from Espírito Santo, Brazil, in BMNH, determined by Keyserling, and the subsequent description in Keyserling, 1892: 128, pl. $6, \not \subset[?]$, of, appear to be those of $O$. hirsuta (Mello-Leitão).

Description. Female from Gonzaga, Minas Gerais, Brazil. Carapace orange with white setae on cephalic region, sides of thoracic region dusky. Chelicerae orange, distally darker. Labium, endites orange. Sternum orange with dusky marks. Coxae lighter orange; legs orange with dusky rings. Dorsum of abdomen orange with black setae, darker anterior to lateral tubercles with a light line between tubercles (Fig. 148); venter light dusky orange without marks. Posterior median eyes 0.6 diameter of anterior mectians, laterals 0.5 diameter. Anterior median eyes 1.2 diameters apart. Posterior median eyes 1.2 diameters apart. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1.2 diameters of anterior median eyes. Abdomen with a pair of anterior tubercles and many short setae, densest on tubercles (Fig. 148). Total length 8.5 mm . Carapace 3.8 mm long, 3.1 wide, 2.0 wide behind lateral eyes. First femur 3.2 mm , patella and tibia 4.2 , metatarsus 2.8, tarsus 1.1. Second patella and tibia 3.9 mm , third 2.5 , fourth 3.8 .

Male from Vicosa, Minas Gerais, Brazil. Color as in female but cephalic region and sides of thoracic region darker orange than middle. Sternum orange underlain by white. Legs orange, distal articles with indistinct darker rings. Abdomen with white cardiac mark. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior niedian eyes 1.1 diameters apart, 1.7 diameters from laterals. Posterior median eyes 1.5 diameters apart, 3.5 diameters from laterals. Ocular quadrangle slightly longer than wide and slightly narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Third and fourth coxae with one macroseta. Third and fourth trochan-
ters with one macroseta. Abdomen oval. Total length 5.2 mm . Carapace 3.1 mm long, 2.5 wide, 1.4 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.6, metatarsus 2.0, tarsus 0.8. Second patella and tibia 3.0 mm , third 1.9 , fourth 2.7 .

Variation. Total length of females 6.9 to 10.8 mm , of males 5.2 to 7.2 . A second male had a macroseta only on the third and fourth coxae and left fourth trochanter. Most females have a similar appearance (Fig. 148); however, a female from Santa Catarina State, Brazil, has the tubercles of the abdomen extended (Fig. 151). Some others have pointed tubercles on the abdomen and a dark folium (Figs. 146, 149 from Rio Grande do Sul). Perhaps they belong to different species. Figures $143,144,147,148,152,153$ were made from specimens from Minas Gerais State, Figures 146, 149 from Rio Grande do Sul, Figures 29-33, 145, 150, 154 from Araucaria Region. Chile.

Diagnosis. Unlike several related species the first pair of muscle scars of the abdomen are outside the anterior dark area (Figs. 148, 150, 151). The tip of the scape of the female epigynum has a slight depression (Fig. 143). There is considerable variation in the length of the scape of the epigynum.

Natural History. A female was collected in Itabapoana, Rio de Janeiro State, at night from an orb in a field (R. L. C. Baptista); in Chile specimens were collected by sweeping at dusk in a Valdivian rain forest.

Specimens Examined. BRAZIL. Minas Gerais: Belo Horizonte (AMNH); Carmo de Rio Clara (MNRJ); Gonzaga de Campos (MZSP); Lavras (MCZ); Minha Serinha Diamantina (AMNH); Viçosa (CUC, AMNH). Mato Grosso do Sul: Três Lagoas, (MZSP). Rio de Janeiro: Itatiaia (AMNH); Bom Jesus do Itabapoana (RLCB); Pinheiro (MNRJ). São Paulo: Castilho (MZSP); Emas (MZSP); Jaboticabal (MCZ, MCN); São Paulo (MZSP). Santa Catarina: Pinhal (AMNH). Rio Grande do Sul: Paso Fundo (MCN); Canela (MCN); Garruches, São Borja (MCN); Cerro Claro, São Pedro do Sul (MCN); Cidreira (MCN);

Chacara Aver, Bom Jesus (MCN); Machadinho (MCN) Parque Estadual de Nonoai (MCN); Sao Leopoldo (MZSP). URUGUAY Durazno: Ave. de Cordoba (MHNM). Paso de los Libres [?] (CAS). ARGENTINA Misiones: Eldorado (AMNH); Las Flores [?] (MACN). Chaco: Presidente Rogue Saenz Peña (MACN). Salta: NE Salta (MCZ). La Pampa: Santa Rosa, (MACN); Realicó (MACN). Santa Fé: Arrufó (MCZ). Entre Ríos: San Felicia [? Feliciano] (MACN). Buenos Aires: Buenos Aires (MACN); S Las Barrancas [La Barranca] (MACN); Punta Lara (MACN). La Rioja: La Rioja (MACN). Neuquén: Piedra del Aguila (ZMK); San Martín de los Andes, Quilquihué (ZMK). Río Negro: (MNRJ); El Bolsón (AMNH). CHILE Coquimbo: 32 km E La Serena (CAS); Combarbalá, Manquehua (MCZ); Hda. Illapel (IRSNB). Valparaiso: Papudo (MNRJ); Quintero (AMNH) Quillota (AMNH). Metropolitana: Aculeo, El Patagual (AMNH); El Canelo, Maipo Canyon (AMNH); Santiago (MCZ); Malleco (AMNH). Maule: Río Terio (AMNH). Bío-Bío: Angol (CAS); Fundo Pinares (MZSP). Araucaria: region de Araucaría (AMNH); 30 km NE Villarica (MCZ). Los Lagos: Llau-llau (USNM); Valley forest, 18 km W Purranque (CAS); Osorno (AMNH); Parque Nacional Puyehue, 4.1 km E Anticura (AMNH); Pucatrihue, coast (AMNH); Chiloé, 10 km N Castro (AMNH).

## Ocrepeira verecunda (Keyserling), new combination Figures 155, 156; Map 5

Epeira verecunda Keyserling, 1865: 824, pl. 19, figs. 14-16, ô. Male holotype from New Granada [old name of Colombia], both palpi lost in BMNH, examined; 1892: 127, pl. 6, fig. 94, of.
Aranea verecunda:-Roewer, 1942: 856.
Araneus verecundus:-Bonnet, 1955: 628.
Note. The male holotype lost both palpi. No other specimen was found that matches Keyserling's illustrations (Figs. I55, 156).

Description. Male holotype. Carapace orange. Sternum, legs light orange. Abdomen orange-white with a white cardiac mark; venter with a white pigment square
between genital groove and spinnerets. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 1.5 diameters apart. Posterior median eyes 1.5 diameters apart. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1.3 diameters of anterior median eyes. Third, fourth coxae each with one macroseta, both on small tubercles. Fourth trochanter with one macroseta. Abdomen with a pair of distinct dorsal, pointed tubercles. Total length 4.8 mm . Carapace 2.5 mm long, 2.1 wide, 1.2 wide behind lateral eyes. First femur 2.5 mm , patella and tibia 2.9 , metatarsus 1.6 , tarsus 0.8 . Second patella and tibia 2.5 mm , third 1.5, fourth 2.1 .

## Ocrepeira redondo new species

 Figures 157-159; Map 5Holotype. Male holotype from Monteredondo, 1,200 m, Depto. Cundinamarca, Colombia, 25 Feb. 1975 (P. A. Schneble), in MCZ. The specific name is a noun in apposition after the type locality

Description. Male holotype. Carapace orange, sides of thoracic region dark dusky. Sternum, coxae orange. Legs dark orange, distal articles of third and fourth with indistinct darker rings. Dorsum of abdomen dusky, with white cardiac mark (Fig. 159); venter dusky without marks. Posterior median eyes same diameter as anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart, 1.8 diameters from laterals. Posterior median eyes 1.2 diameters apart, slightly more than 2 diameters from laterals. Ocular quadrangle square. Height of clypeus equal to
1.1 diameters of anterior median eyes. Third and fourth coxae with one macroseta. Fourth trochanter with one macroseta. Total length 4.5 mm . Carapace 2.7 mm long, 2.3 wide, 1.2 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.2, metatarsus, tarsus lost. Second patella and tibia 2.7 mm , third 1.7 , fourth 2.3 .

Variation. Total length of males 4.5 to 5.0 mm . The illustrations were made from the holotype.

Diagnosis. The soft terminal apophysis hangs over the conductor. The shape of the median apophysis is diagnostic (Figs. 157, 158).

Natural History. The specimen from Sierra Nevada de Santa Marta was beaten from dry banana leaves on a plantation.

Specimens Examined. COLOMBIA Magdalena: San Sebastian de Rabago, Sierra Nevada de Santa Marta, 2,000 m, 1114 May 1968, ô (B. Malkin, AMNH).

## Ocrepeira lurida (Mello-Leitão), new combination <br> Figures 160-166; Map 5

Wixia lurida Mello-Leitão, 1943: 106, fig. 6, \&. Female holotype from Alta Gracia, Córdoba Prov., Argentina, in MLP, examined. Brignoli, 1983: 281.

Description. Female from Calamuchita, Córdoba Prov., Argentina. Carapace orange, eye area and clypeus dusky. Chelicerae, labium, endites orange. Sternum orange. Coxae yellowish; legs orange with black rings. Dorsum of abdomen white, dusky and with brownish black transverse bars (Fig. 163); venter dusky with a pair

Figures 160-166. Ocrepeira lurida (Mello-Leitāo). 160-164, female. 160-162, epigynum. 160, ventral. 161, posterior. 162, lateral. 163, dorsal. 164, abdomen, ventral. 165, 166, left male palpus.

Figures 167-173. O. willisi n. sp. 167-171, female. 167-169, epigynum. 167, ventral. 168, posterior. 169, lateral. 170, dorsal. 171, abdomen, ventral. 172, 173, male palpus.

Figures 174-179. O. tumida (Keyserling). 174-177, female. 174-176, epigynum. 174, ventral. 175, posterior. 176, lateral. 177, dorsal. 178, 179, male palpus.

Figures 180-185. O. malleri n. sp. 180-183, female. 180-182, epigynum. 180, ventral. 181, posterior. 182, lateral. 183, dorsal. 184,185 , male palpus.

of white patches (Fig. 164). Posterior median eyes 1.2 diameters of anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.2 diameters apart. Ocular quadrangle wider behind than in front. Height of clypeus equal to 1.2 diameters of anterior median eyes. Abdomen subspherical with a pair of humps (Fig. 163). Total length 6.0 mm . Carapace 2.5 mm long, 2.2 wide, 1.2 wide behind lateral eves. First femur 2.7 mm , patella and tibia 2.9 , metatarsus 2.6, tarsus 0.7 . Second patella and tibia 2.8 mm , third 1.8 , fourth 2.7 .

Male from Calamuchita, Córdoba Prov., Argentina. Color as in female except venter of abdomen lighter than that of female. Posterior median eyes same diameter as anterior medians, liaterals 0.6 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.3 diameters apart. Ocular quadrangle square. Height of clypeus equal to 1.2 diameters of the anterior median eyes. Third, fourth coxae each with a macroseta. Fourth trochanter with one macroseta. First, second, and fourth femurs with a ventral row of macrosetae. Second tibia thicker than first, swollen with prolateral macrosetae. Total length 5.0 mm . Carapace 2.7 mm long, 2.2 wide, 1.4 wide behind lateral eyes. First femur 2.9 mm , patella and tibia 3.5, metatarsus 1.9, tarsus 0.8. Second patella and tibia 3.0 mm , third 1.8, fourth 2.8.

Note. Two males were collected with females.

Variation. Total length of females 4.9 to 6.9 mm , of males 5.0 to 5.1 . The illustrations were made from specimens of the Córdoba Prov., Argentina.

Diagnosis. The two dark spots on the flat scape of the epigynum (Fig. 160) and the vase-shaped posterior median plate (Fig. 161) separate females from $O$. venustula. The male has the terminal apophysis hanging over the conductor as in venustula, but is smaller and has a differently shaped median apophysis (Figs. 165, 166).

Natural History. A female was collected in Yungas forest in Argentina.

Specimens Examined. BOLIVIA Santa Cruz: Comarapa, 1,800 m, 14 Dec. 1984, 2 (L. Peña, AMNH). Chuquisaca: E Monteagudo, $1,600 \mathrm{~m}, 21-24 \mathrm{Dec} .1984$, 4영 (L. Peña, AMNH). ARGENTINA Salta: El Rey National Park, Pozo Verde Trail, $950 \mathrm{~m}, 10-13$ Dec. 1987, ㅇ (S., J. Peck, AMNH). Córdoba: Alta Gracia, Feb. 1934, of (C. Bruch, MACN); Calamuchita, Dec. 1940, \%, Dec. 1941, 6ㅇ, đ, 2 imm. (J. M. Viana, MACN). Buenos Aires: Sierra de la Ventana, Mar. 1939, ㅇ, 2ô, 3 imm. (H. Bario, MACN).

## Ocrepeira willisi new species <br> Figures 167-173; Map 4

Holotype. Female holotype from El Volcán, Chiriquí Prov., Panama, 20 Mar. 1936 (W. J. Gertsch), in AMNH. The species is named after the collector.

Description. Female holotype. Carapace orange with light setae, cephalic region slightly darker. Clypeus dusky on each side. Chelicerae, labium, endites orange. Sternum orange, borders dark. Coxae, legs orange with darker rings. Dorsum of abdomen white and gray spotted, with dark folium and transverse bars posteriorly (Fig. 170); venter with a pair of white spots (Fig. 171). Posterior median eyes 1.1 diameters of anterior medians, anterior laterals 0.6 diameter, posterior laterals 0.8. Anterior median eyes 1.2 diameters apart. Posterior median eyes 2 diameters apart. Ocular quadrangle slightly wider behind than in front. Height of clypeus equal to 1.5 diameters of anterior median eyes. Abdomen with indistinct tubercles (Fig. 170). Total length 5.7 mm . Carapace 2.4 mm long, 2.2 wide, 1.5 wide behind lateral eves. First femur 2.3 mm , patella and tibia 2.9 , metatarsus 2.0, tarsus 0.8. Second patella and tibia 2.7 mm , third 1.6, fourth 2.5 .

Male from type locality. Color as in female, except for some white pigment underneath orange of carapace. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes slightly less than their diameter apart. Posterior median eyes 2 diameters
apart. Ocular quadrangle slightly wider behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Third, fourth coxae each with one macroseta. Fourth trochanter with one macroseta. Total length 4.5 mm . Carapace 2.5 mm long, 2.1 wide, 1.1 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.1, metatarsus 1.9 , tarsus 0.9. Second patella and tibia 2.7 mm , third 1.6 , fourth 2.3.

Note. Males and females were collected together.

Variation. Illustrations were made from the holotype and a male collected at the type locality.

Diagnosis. The female differs from that of $O$. tumida and others by the relative "deep" position of the posterior median plate and the transverse pit behind the scape (Fig. 168). The male can be separated from the male of $O$. tumida by the shape of the median and terminal apophyses (Figs. 172, 173).

Specimens Examined. PANAMA Chiriquí: El Volcán, 25 Feb. 1936, 29, ô, paratypes (W. J. Gertsch, AMNH). Panamá: Barro Colorado Isl., Lago Gatún, 12 Feb. 1936, \& (W. J. Gertsch, AMNH).

## Ocrepeira tumida (Keyserling), new combination

Figures 174-179; Map 5
Epeira tumida Keyserling, 1865: 808, pl. 18, fig. 18, figs. 6-8, 9. Female lectotype here designated, and one paralectotype (belonging to another species) from New Granada [old name for Colombia], in BMNH no. 1890.7.1.4675, examined; (not Acrosoma tumida Taczanowski, which has been placed in Araneus by later authors).
Wixia tumida:-Keyserling, 1892: 48, pl. 2, fig. 39, ㅇ. Roewer, 1942: 882. Bonnet, 1959: 4830.

Description. Female specimen from Ecuador. Carapace dark brown with long white setae. Chelicerae dark brown. Labium brown. Endites, sternum, coxae or-ange-brown; legs dark brown. Dorsum of abdomen light with some tiny dark dots, anterior dark (Fig. 177); venter black without marks. Posterior median eyes 1.3
diameters of anterior medians, laterals 0.8 diameter. Anterior median eyes 1.1 diameters apart. Posterior median eyes 1.4 diameters apart. Ocular quadrangle wider behind than in front. Posterior median eyes on a swelling. Height of clypeus equal to 1.2 diameters of anterior median eye. Abdomen with a pair of humps facing anteriorly (Fig. 177). Total length 6.8 mm . Carapace 3.1 mm long, 2.4 wide, 1.8 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.4, metatarsus 2.1, tarsus 0.8 . Second patella and tibia 3.4 mm , third 2.1, fourth 2.9.

Male from Ecuador in poorly preserved condition. Carapace dark orange, sternum underlain by white pigment, legs ringed. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes 1.3 diameters apart. Ocular quadrangle wider behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Third, fourth coxae each with one macroseta. Fourth trochanter with one macroseta. Abdomen with humps facing anteriorly. Total length 4.5 mm . Carapace 2.7 mm long, 2.1 wide, 1.3 wide behind lateral eyes. First femur 2.5 mm , patella and tibia 3.0, metatarsus 1.8 , tarsus 0.7 . Second patella and tibia 2.7 mm , third 1.8 , fourth 2.5 .

Note. A male and a female were collected together and both have the forwardfacing abdominal humps.

Variation. The lectotype has similar measurements to the specimen described. It differs in coloration: the anterior of the abdomen is brown bordered by white, and the transverse line between the tubercles is broken by a light cardiac mark. Behind the line most of the abdomen is light with a rectangular gray mark. The venter of the abdomen has a white square between epigynum and spinnerets. The humps are farther apart than the illustrated specimen (Fig. 177) and face laterally. The epigynum differs in ventral view by having less of a groove on the scape, and a greater depression anteriorly on the base. In pos-
terior view, the median plate is slightly narrower, the laterals are wider, and the scape has no ridge ventrally; it is flat. Figures 174 to 179 were made from specimens from Ecuador.

Diagnosis. Both the holotype and the specimen described have the first and second patella-tibia of equal length. The epigynum has a longitudinal groove in ventral view (Fig. 174) and the median plate has a keel in posterior view (Fig. 175). The prong of the median apophysis, unlike that of other males, is wide just below its tip and slightly flattened (Figs. 178, 179).

Specimens Examined. ECUADOR Tungurahua: Baños, Falls of Agoyan, 1,500 m, 12 May 1939, ㅇ, 2o (W. Clarke-Macintyre, AMNH).

## Ocrepeira malleri new species Figures 180-185; Map 5

Holotype. Female holotype from Pinhal, Santa Catarina State, Brazil, Dec. 1947 (A. Maller), in AMNH. The species is named after the collector.
Description. Female holotype. Carapace orange-brown with white and dark setae. Chelicerae, labium, endites dark orange. Sternum, coxae dark orange; legs or-ange-brown. Dorsum of abdomen light gray, anterior black between tubercles, dark area includes anterior pair of muscle scars (Fig. 183); venter dusky orange-gray, without marks. Posterior median eyes 1.1 diameters of anterior medians, laterals 0.7 diameter. Anterior median eyes 1.2 diameters apart. Posterior median eyes 2 diameters apart. Laterals almost their diameter apart. Ocular quadrangle very slightly wider behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen as in Figure 183. Total length 8.8 mm . Carapace 3.9 mm long, 3.3 wide, 1.8 wide behind lateral eyes. First femur 3.5 mm , patella and tibia 4.2 , metatarsus 2.7, tarsus 1.1. Second patella and tibia 3.9 mm , third 2.4 , fourth 3.5 .

Male from Pinhal, Santa Catarina, Brazil. Color as in female but sternum underlain by white; anterior dark area of ab-
domen divided by white cardiac mark and does not include anterior muscle scars. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart, 1.7 diameters from laterals. Posterior median eyes 1.5 diameters apart, 3 diameters from laterals. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Third and fourth coxae with one macroseta. Third and fourth trochanters with one macroseta. Total length 7.0 mm . Carapace 3.7 mm long, 3.1 wide, 1.4 wide behind lateral eyes. First femur 3.8 mm , patella and tibia 4.2 , metatarsus 2.6 , tarsus 1.0. Second patella and tibia 3.4 mm , third 2.3, fourth 3.2.

Note. Males and females were matched because they were collected at the same locality and both lack ventral markings.

Variation. The scape of the epigynum of two females is broken off leaving a short pointed stump. Total length of females 8.8 to 9.0 mm , of males 5.7 to 9.0 . Illustrations were made from the female holotype and a male from the type locality.

Diagnosis. Of all females in which the anterior abdominal dark area includes the first muscle scars, $O$. malleri is distinguished by the distinct shape of the scape, which is widened above its tip (Fig. 180) and the circular posterior median plate (Fig. 181). Males can be separated from others by the short terminal apophysis and the shape of the median apophysis (Figs. 184, 185), which shows a slight hump on its "upper" face (Fig. 185).

Specimens Examined. BRAZIL Rio de Janeiro: Petrópolis, Dec. $1945,850 \mathrm{~m}$, \& (H. Sick, AMNH). Paraná: Rio Negro, ô (MNRJ); Rôlandia, ô (A. Maller, AMNH). Santa Catarina: Pinhal, Dec. 1947, 2o, Jan. 1948, 68, ô paratypes (all A. Maller, AMNH).

## Ocrepeira galianoae new species <br> Figures 186-191; Map 5

Holotype. Female holotype from General Belgrano, Misiones Prov., Argentina, Dec. 1972 (M. E. Ga-
liano), in MACN no. 8915. The species is named after colleague M. E. Galiano, the collector.

Description. Female holotype. Carapace orange-brown with hair-like setae. Chelicerae orange, distally darker. Labium, endites brown. Sternum brown with median light line. Coxae light orange; legs orange-brown, distal articles with indistinct darker ring. Dorsum of abdomen grayish orange-brown, darker anterior to a line between tubercles, dark area including first pair of muscle scars (Fig. 189); venter dusky orange-brown. Posterior median eyes same diameter as anterior medians, laterals 0.5 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.8 diameters apart. Ocular quadrangle square. Height of clypeus equal to 1 diameter of anterior median eyes. Leg 2 longer than 4. Abdomen as in Figure 189. Total length 8.5 mm . Carapace 3.5 mm long, 2.9 wide, 1.7 wide behind lateral eyes. First femur 3.5 mm , patella and tibia 4.1, metatarsus 2.7, tarsus 0.9. Second patella and tibia 3.9 mm , third 2.5 , fourth 3.6.

Male from Vacaria, Rio Grande do Sul, Brazil. Color as in female, except for white pigment spots under sternum and a white cardiac mark dividing dark area of abdomen; dark area not covering anterior muscle scars. Posterior median eyes 0.9 di ameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 1.1 diameters apart, 2 diameters from laterals. Posterior median eyes 1.2 diameters apart, 2.5 diameters from laterals. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Third and fourth coxae each with one macroseta. Fourth trochanter with one macroseta. Total length 6.0 mm . Carapace 3.2 mm long, 2.7 wide, 1.3 wide behind lateral eyes. First femur 3.1 mm , patella and tibia 3.8 , metatarsus 2.1, tarsus 0.8. Second patella and tibia 3.0 mm , third 2.1 , fourth 2.8 .

Note. Males and females were collected
together. Both sexes have an indistinct pair of white, ventral patches.

Variation. Total length of females 6.3 to 10.2 mm , of males 5.6 to 7.3 . The scape of the epigynum is of variable length. Some specimens have a pair of indistinct, ventral white patches. Figures 186-189 were made from the holotype; Figures 190, 191 were made from a male from Vacaria, Rio Grande do Sul.

Diagnosis. The base of the female epigynum, unlike that of $O$. fiebrigi and $O$. gima, is longer than wide in posterior view (Fig. 187); the male differs from others by the long, pointed terminal apophysis and the shape of the median apophysis, which has a tubercle on the "upper" face below the tip of the prong (Figs. 190, 191).

Natural History. A female was collected in an orb web at night, 2 m above the ground on a tree in Paraná State, Brazil.

Specimens Examined. BRAZIL São Paulo: Boracéia, 5 Feb. 1960, 9 (F. Lane, MZSP 3860); Fazenda Intervales, 15 km E Guapiara, 700 m, Feb. 1990, 29 (W. Eberhard, MCZ). Paraná: Curitiba, 5 Feb. 1988, of (R. C. L. Baptista, MZSP 13170); Rio Negro, $\delta$ (MNRJ). Santa Catarina: Pinhal, Dec. 1947, 29, Jan. 1948, \&; May 1948, \&; Dec. 1948, 2q, ô (A. Maller, AMNH). Rio Grande do Sul: Parque Estadual de Nonoai, Nonoai, 14 Jan. 1985, 39 (A. A. Lise, MCN 12811 ); Pelotas, 2 Mar. 1964, ㅇ, 8 (C. M. Biezanko, MCZ); Machadinho, 8-14 Feb. 1989, 9 (A. B. Bonaldo, MCN 18191); Sobradinho, 10 Jan. 1985, 59, $4 \hat{\text { ob }}$ (A. A. Lise, MCN 12889); Canela, 26 Dec. 1974, 49, $\widehat{\delta}, \mathrm{imm}$. (A. A. Lise, MCN 02445); Santa Maria, 2 Nov. 1985, 69 , $2 \delta$ (A. D. Brescovit, MCN 14592, 14593); São Francisco de Paula, 49 (MNRJ); Vacaria, 14 Jan. 1974, o (A. A. Lise, MCN 00309a). ARGENTINA Misiones: Cataratas de Iguazú, 5 Sept. 1963, ó paratype (M. E. Galiano, MEG); General Belgrano, Dec. 1972, ô paratype (M. E. Galiano, MEG). Corrientes: Colón, Dec. 1975, ô (M. E. Galiano, MEG). Buenos Aires: Boulogne, Oct. 1938, of (R. F. Prosen, MLP); Glew, 1969, \& (D. Carpin-
tero, MACN). Neuquén: Parque Nacional Lanin, Pucará, Feb. 1963, of (S. Schajovskoy, MACN).

## Ocrepeira fiebrigi (Dahl), new combination <br> Figures 192-199; Map 5

Aranea fiebrigi Dahl, 1906: 735. Syntypes: two females, eight males, two immatures from Paraguay [no locality], in ZMB, examined. Roewer, 1942: 842. Araneus fiebrigi:-Bonnet, 1955: 502.

Description. Female syntype. Carapace orange. Chelicerae, labium, endites orange. Sternum orange. Coxae orange; legs light orange, with indistinct darker rings. Dorsum of abdomen brownish, anterior darker and covering anterior pair of muscle scars as in Figure 189; venter with pair of white patches (Fig. 197). Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Ocular quadrangle square. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen as in Figure 197. Total length 9.7 mm . Carapace 4.7 mm long, 4.0 wide, 2.7 wide behind lateral eyes. First femur 4.0 mm , patella and tibia 5.2, metatarsus 3.1, tarsus 1.1. Second patella and tibia 4.9 mm , third 3.2, fourth 4.7 .

Male syntype. Color as in female but with white cardiac mark on abdomen. Posterior median eyes same diameter as anterior medians, laterals 0.6 diameter. Anterior median eyes 0.6 diameter apart. Posterior median eyes their diameter apart. Ocular quadrangle square. Height of clypeus equal to 1 diameter of anterior median eyes. First coxa with hook and small posterodorsal tubercle. Third and fourth cox-
ae and trochanters each with one short macroseta. Abdomen oval. Total length 7.7 mm . Carapace 4.2 mm long, 3.3 wide, 1.5 wide behind lateral eyes. First femur 4.5 mm , patella and tibia 5.1, metatarsus 3.1, tarsus 1.1. Second patella and tibia 4.0 mm , third 2.9, fourth 3.9.

Note. Males and females were collected together.

Variation. Total length of females 8.0 to 10.1 mm , of males 6.7 to 8.2 . Most females have the scape of the epigynum torn off (Figs. 194-196). The posterior median plate of the epigynum is longer in some individuals than in the one illustrated. Some males lack a macroseta on the third coxa. Description and figures were made from syntypes. However, the description of the ocular square, height of clypeus, and width of carapace behind lateral eyes was made from a female from São Paulo State and a male from Rio Grande do Sul State. Figures 191, 192, 193 were made from a female from Paraguay.

Diagnosis. Only O. gima also has a laterally flattened epigynal scape. Ocrepeira fiebrigi can be separated from O. gima by the trapezoid shape of the posterior median plate (Fig. 195). The male can be separated from others by the sclerotized conductor, the short terminal apophysis, and a keel on the "upper" face of the prong of the median apophysis (Figs. 198, 199).

Natural History. Specimens were collected as they hung from a thread at night, another specimen was in an orb web in Chaco Dept., Paraguay.

Specimens Examined. BRAZIL Pará: Belém, \& (C. F. Baker, MCZ). Goias: Jataí, Fazenda Cachoeirinha, ㅇ (Exped. Dept Zool., MZSP 9560). Mato Grosso: Chapada dos Guimaraes, Nov. 1963, i (M. Alvar-

[^2] 189, dorsal. 190, 191, left male palpus.

Figures 192-199. O. fiebrigi (Dahl). 192-198, female. 192-196, epigynum. 192, 194, ventral. 195, posterior. 193, 196, lateral. 194-196, scape torn off. 197, abdomen, ventral. 198, 199, male palpus.


Figures 205-211. O. gima n. sp. 205-209, female. 205-207, epigynum. 205, ventral. 206, posterior. 207, lateral. 208, dorsal. 209, abdomen, ventral. 210, 211, male palpus.

Scale lines. 1.0 mm , genitalia 0.1 mm .
enga, AMNH); Cuiabá, Nov. 1963, 29 (M. Alvarenga, AMNH). São Paulo: Estrada Santa Amaro, Engo. Narcilac, km 48, 15 Jan. 1961, \& (F. Werner, MZSP). Rio Grande do Sul: Garruchos, S Borja, 10 Dec. 1975, 6̊ 9 , 3 8, 11 imm . (A. A. Lise, MCN 3223). PARAGUAY Chaco: Parque Nacional Defensores del Chaco, Cerro León, 18-27 Nov. 1984, 38, 4 (J. A. Kochalka, IRNP).

## Ocrepeira molle new species <br> Figures 200-204; Map 5

Holotype. Female holotype from Horco Molle, Tucumán Prov., Argentina, Nov. 1965 (A. Bachmann), in Galiano Coll., MACN no. 8916. The specific name is a noun in apposition after the type locality:

Description. Female holotype. Carapace orange, cephalic region dusky with white setae. Chelicerae, labium, endites dusky orange. Sternum dark orange with white pigment. Coxae light orange; legs dark orange with darker rings, more distinct ventrally. Dorsum of abdomen gray, the anterior dark area includes anterior muscle scars (as in Figure 189); venter with tiny white pigment spots, dusky between epigynum and spinnerets. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 1.3 diameters apart. Posterior median eyes 1.5 diameters apart. Ocular quadrangle very slightly wider behind than in front. The height of the clypeus equal to 1.2 diameters of anterior median eyes. Total length 8.2 mm . Carapace 3.5 mm long, 2.8 wide, 1.8 wide behind lateral eyes. First femur 3.2 mm , patella and tibia 3.8, metatarsus 2.7, tarsus 0.9. Second patella and tibia 3.6 mm , third 2.3, fourth 3.4 .

Male from Argentina. Color as in female but dorsum of abdomen with a white cardiac mark dividing dark area and dark areas not covering anterior pair of muscle scars. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes 1.4 diameters apart. Ocular quadrangle wider behind than in front. Height of clypeus equal to 1 di-
ameter of anterior median eyes. Third, fourth coxae each with one macroseta. Fourth trochanter with one macroseta. Total length 5.0 mm . Carapace 2.7 mm long, 2.3 wide, 1.3 wide behind lateral eyes. First femur 2.8 mm , patella and tibia 3.3 , metatarsus 1.8 , tarsus 0.8. Second patella and tibia 2.6 mm , third 1.7 , fourth 2.5 .

Variation. Total length of females 8.2 to 8.5 mm . The illustrations were made from the holotype.

Diagnosis. In ventral view (Fig. 200), the epigynum can be confused with that of O. hirsuta (Fig. 119). in posterior view (Fig. 201) with that of O. fiebrigi (Fig. 195). In lateral view, the tip of the median apophysis has the silhouette resembling a mouse head (Fig. 204).

Natural History. Specimens were collected by sweeping in the Yungas forest in Argentina.

Specimens Examined. BOLIVIA Santa Cruz: Santa Rosa, N Mataral, $1,100 \mathrm{~m}, 14-$ 15 Dec. 1984, 48, ô (L. Peña, AMNH). Chuquisaca: E Monteagudo, $1,600 \mathrm{~m}, 21-$ 24 Dec. 1984, 28, 28 (L. Peña, AMNH). ARGENTINA Salta: El Rey National Park, Pozo Verde Trail, $950 \mathrm{~m}, 10-13 \mathrm{Dec} .1987$, 38 (S., J. Peck, AMNH).

## Ocrepeira gima new species Figures 205-211; Map 5

Holotype. Female holotype, male paratype from Chapada dos Guimarães, Mato Grosso State, Brazil, Nov. 1963 (M. Alvarenga), in AMNH. The specific name is an arbitrary combination of letters.
Description. Female holotype. Carapace orange with many short white setae. Chelicerae, labium, endites orange. Sternum orange with some darker streaks. Coxae, legs orange. Anterior of dorsum of abdomen dark, dark area enclosing first pair of muscle scars, posterior with faint trausverse bands (Fig. 208); venter gray with a pair of white patches (Fig. 209). Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior median eyes 0.9 diameter apart. Posterior median eyes 1.3 diameters apart. Ocular quadrangle slightly wider than long, wider behind than in front. Height
of clypeus equal to 1.3 diameters of anterior median eyes. Posterior median eyes on swelling. Abdomen as in Figure 208. Total length 9.5 mm . Carapace 4.0 mm long, 3.4 wide, 1.8 wide behind lateral eyes. First femur 3.9 mm , patella and tibia 4.6 , metatarsus 2.9, tarsus 1.l. Second patella and tibia 4.3 mm , third 2.8 , fourth 4.1 .

Male paratype. Color as in female, but with white pigment under orange sternum, legs with dark rings, and anterior dark area of abdomen between tubercles not enclosing anterior muscle scars. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes 1.4 diameters apart. Ocular quadrangle slightly longer than wide, narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Third, fourth coxae each with one macroseta. Third and fourth trochanters each with one macroseta. Total length 5.2 mm . Carapace 2.9 mm long, 2.4 wide, 1.2 wide behind lateral eyes. First femur 3.1 mm , patella and tibia 3.2, metatarsus 2.0 , tarsus 0.8. Second patella and tibia 2.9 mm , third 2.0, fourth 2.7.

Note. Males and females were collected at the same locality.

Variation. Total length of females 9.5 to 10.5 mm . Illustrations were made from the holotype and the paratype from the type locality.

Diagnosis. This species resembles $O$. lurida (Figs. 160-166) and is distinguished from it by the laterally flattened scape (or scar of the torn scape), and by the curved shape of the terminal apophysis of the palpus (Fig. 210).

Specimens Examined. BRAZIL Mato Grosso: Rio Xingu, Pôsto Jacaré, Nov. 1961, ㅇ (M. Alvarenga, F. Werner, AMNH); Jaciara, Nov. 1963, \& (M. Alvarenga, AMNH).

## Ocrepeira pinhal new species Figures 212-215; Map 5

Holotype. Female holotype from Pinhal, Santa Catarina State, Brazil, Dec. 1948 (A. Maller), in AMNH. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange-brown with dark and white hairs. Chelicerae orange-brown. Labium, endites brown. Sternum orange, darker on sides. Coxae orange with brown margins; legs dark orange with darker rings. Dorsum of abdomen white to brown with two black transverse bars posteriorly (Fig. 215); venter dusky. Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior median eyes 1 diameter apart. Posterior median eyes 2 diameters apart. Ocular quadrangle wider behind than in front. Height of clypeus equal to 1.2 diameters of anterior median eyes. Abdomen oval with two round humps facing anteriorly (Fig. 215). Total length 8.0 mm . Carapace 3.2 mm long, 2.7 wide, 1.7 wide behind lateral eyes. First femur 3.1 mm , patella and tibia 3.5, metatarsus 2.4, tarsus 0.9. Second patella and tibia 3.4 mm, third 2.1, fourth 3.2 .

Variation. Total length of females 7.0 to 8.5 mm . The paratypes have a pair of white patches on the venter of the abdomen. The illustration was made from the holotype.

Diagnosis. The shape of the ventral face of the epigynum (Fig. 212) differs from that of other species and, unlike most others, the lateral plates touch in the midline in posterior view (Fig. 213).

Specimens Examined. BRAZIL Santa Catarina: Pinhal, Dec. 1947, 2q, Jan. 1948 49, Dec. 1948-Jan. 1950, 2 i paratypes (A. Maller, AMNH). Rio Grande do Sul: Garruchos, São Borja, 9 Dec. 1975, \& (A. A. Lise, MCN 3272).

## Ocrepeira maltana new species Figures 216-217; Map 6

Holotype. Male holotype and one male paratype from Machupicchu, above ruins, 2,600-2,800 m, Depto. Cuzco, Peru, l-5 July 1964 (B. Malkin), in AMNH. The specific name is an arbitrary combination of letters.

Description. Male holotype. Carapace reddish brown. Chelicerae dark brown, distally lighter. Labium, endites brown. Sternum brown, posterior lighter. Coxae dark orange. Legs red-brown with black
rings. Dorsum of abdomen with anterior dark area covering the first pair of muscle scars, posterior with dark folium (Fig. 217); venter black. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1.1 diameters of anterior median eyes. Fourth coxa with one macroseta without tubercle. Total length 3.8 mm . Carapace 2.1 mm long, 1.6 wide, 0.9 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 2.9 , metatarsus 1.8, tarsus 0.7. Second patella and tibia 2.4 mm , third 1.3, fourth 1.7 .

Diagnosis. Unlike that of other species of the genus, this male resembles that of Alpaida species by having the tip of the paramedian apophysis covered by the cymbium, by having the axis of the radix at an almost right angle to the margin of the cymbium, by the long curved embolus, and by the shape of the median apophysis (Fig. 216). Also the tooth on the endite is opposed by a tooth on the palpal trochanter. However, the coloration of the abdomen and the pointed tip of the paramedian apophysis, hidden by the cymbium, place this male in Ocrepeira.

## Ocrepeira bispinosa (Mello-Leitão), new combination

Figures 218-223; Map 5
Carepalxis bispinosus Mello-Leitão, 1945: 173. Immature holotype and one smaller imm. paratype from Monjolinho, Corumbá, Goiás State, Brazil, in MZSP, examined. Brignoli, 1983: 264.
Wixia bicornuta Mello-Leitão, 1949: 19, fig. 11, imm. Immature holotype from confluence of Rio Culuene and Rio Xingu, Mato Grosso State, Brazil, in MNRJ, examined. Brignoli, 1983: 281. NEW SYNONYMY.

Synonymy. Since the types of both $C$. bispinosus and W. bicornuta are immature, the synonymy remains uncertain.

Description. Female from Santa Rita do Araguaia, Goiás, Brazil. Carapace orange, cephalic region darkest. Chelicerae orange with a dark patch. Labium, endites dark orange. Sternum orange. Coxae orange; legs orange with indistinct dark rings. Dorsum of abdomen with gray and black patches, no distinct marks (Fig. 221); venter dusky orange. Posterior median eyes same diameter as anterior medians, laterals 0.6 diameter. Anterior median eyes 0.9 diameter apart. Posterior median eyes 1.7 diameters apart. Ocular quadrangle wider than long, wider behind than in front. Height of clypeus equal to 1.2 diameters of anterior median eyes. Abdomen with a pair of pointed tubercles close together (Fig. 221). Total length 8.5 mm . Carapace 3.4 mm long, 3.1 wide, 2.0 wide behind lateral eyes. First femur 3.4 mm , patella and tibia 4.0, metatarsus 2.7 , tarsus 0.9. Second patella and tibia 3.7 mm , third 2.5, fourth 3.4.

Male from Chapada dos Guimaraes, Mato Grosso, Brazil. Coloration as in female. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.9 diameter apart. Posterior median eyes 2 diameters apart on a swelling. Ocular quadrangle wider behind than in front. Height of clypeus equal to 1.4 diameters of anterior median eyes. Fourth coxa with one macroseta. Fourth trochanter with one macroseta. Abdomen with two anterior spine-shaped tubercles as in O. gnomo, each with a sclerotized cap. Total length 4.8 mm . Carapace 2.9 mm long, 2.9 wide, 1.5 wide behind lateral eyes. First femur 2.9 mm , patella and tibia 3.7, metatarsus 2.3, tarsus 1.1.

Figures 212-215. Ocrepeira pinhal n. sp., female. 212-214, epigynum. 212, ventral. 213, posterior. 214, lateral. 215, dorsal.
Figures 216-217. O. maltana n. sp., male. 216, left palpus. 217, dorsal.
Figures 218-223. O. bispinosa (Mello-Leitāo). 218-221, female. 218-220, epigynum. 218, ventral. 219, posterior. 220, lateral. 221, dorsal. 222, 223, male palpus.


Figures 224-231. O. gnomo (Mello-Leitão). 224-229, female. 224-226, epigynum. 224, ventral. 225, posterior. 226, lateral. 227, 228, dorsal. 229, lateral. 230, 231, male palpus.

Figures 232-235. O. lisei n . sp., female. 232-234, epigynum. 232, ventral. 233, posterior. 234, lateral. 235, dorsal.
Scale lines. 1.0 mm , genitalia 0.1 mm .

Second patella and tibia 3.1 mm , third 2.0 , fourth 2.7.

Note. Males and females were matched because they have similar-shaped tubercles with a sclerotized cap on the abdomen. The upper prong of the left median apophysis of the palpus is broken, and the outline was drawn from the mirror image of the right (Fig. 223).

Variation. Total length of males 4.8 to 5.7 mm . Figures were made from the only two adults a vailable.

Diagnosis. Ocrepeira bispinosa has a wider scape (Fig. 218) than does O. gnomo (Fig. 224), and the median apophysis of the male palpus has a "vertical" keel in its widest portion (Fig. 222), absent in the male of $O$. gnomo (Fig. 230).

Specimens Examined. BRAZIL Mato Grosso: Chapada dos Guimarães, 18 Nov. 1983, ô (M. Hoffmann, MCN 11986). Goiás: Santa Rita do Araguaia, Dec. 1963, \& (M. Alvarenga, AMNH).

## Ocrepeira gnomo (Mello-Leitão), new combination

Figures 224-231; Map 5
Wixia gnomo Mello-Leitão, 1943: 195, fig. 25, imm. Immature male holotype from Rio Grande do Sul, Brazil, in MNRJ, examined. Brignoli, 1983: 281.
Description. Female from Montenegro, Rio Grande do Sul, Brazil. Carapace orange, cephalic region darkest, clypeus dark. Chelicerae brown with a yellow patch. Labium, endites brown. Sternum light orange underlain by white pigment spots and edge dark. Coxae light orange; legs orange with brown rings. Dorsum of abdomen white with black and gray spots (Figs. 227, 228); venter dusky. Cephalic region very wide (Figs. 227, 228). Posterior median eyes 1.1 diameters of anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.2 diameters apart. Posterior median eyes on swelling, facing forward and to sides. Ocular quadrangle wider behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen with pro-
jecting tubercles (Figs. 227-229). Total length 5.4 mm . Carapace 2.3 mm long, 2.1 wide, 1.4 wide behind lateral eyes. First femur 2.1 mm , patella and tibia 2.7 , metatarsus 1.7 , tarsus 0.7. Second patella and tibia 2.4 mm , third 1.5 , fourth 2.1. Abdomen 4.9 mm long.

Male from Santo Amaro, São Paulo, Brazil. Carapace orange, sides of cephalic region and area between median and lateral eyes brown. Chelicerae brown. Labium, endites orange. Sternum orange underlain by white pigment. Coxae orange; legs orange with indistinctly bordered dark rings Dorsum of abdomen gray and white spotted, venter gray. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.7 diameter apart, 1.5 diameters from laterals. Posterior median eyes 1.5 diameters apart. Ocular quadrangle square. Height of clypeus equal to 1.1 diameters of anterior median eyes. Fourth coxa with one macroseta. Fourth trochanter with one macroseta. Abdomen oval with two anterior tubercles. Total length 5.3 mm . Carapace 2.8 mm long, 2.5 wide. 1.3 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.4 , metatarsus 2.0 , tarsus 0.9 . Second patella and tibia 2.7 mm , third 1.7 , fourth 2.5 .

Note. Males and females were collected together.

Variation. Total length of females 5.0 to 5.8 mm , of males 4.1 to 5.2 . The anterior tubercles of the abdomen are pointed (Fig. 228) or swollen humps (Fig. 227), and proximal to each other pointing forward. One individual has the pedicel inserted on the posterior half of the abdomen. The females illustrated (Figs. 224-229) were made from two individuals from Rio Grande do Sul: Figures 224-227, 229 from the first, 228 from the second. The male illustrated came from Engo. Marcilac, São Paulo State.

Diagnosis. Females differ from those of O. bispinosa by the narrow scape with parallel sides, from those of O. lisei (Fig. 233) by the larger posterior median plate (Fig. 225). The male differs from that of $O$.
bispinosa (Fig. 222) by having two "horizontal" keels above the base of the median apophysis (Fig. 230).

Specimens Examined. BRAZIL São Paulo: Engo. Marcilac, Santo Amaro, 1617 Dec. 1966, ô (P. de Biasi, MZSP 5400a); Honto Florestal [?], Dec. 1943, \&, ô (F. Lane, MZSP 4549). Paraná: Curitiba, Nov. 1938, ó (F. S. Pereira, MZSP 7566). Rio Grande do Sul: Campo Bom, 28 Nov. 1979, of (C. J. Becker, MCN 8778); Carazinho, 10 Nov. 1979, \& (H. Bischoff, MCN 8680); Montenegro, 1 Dec. 1977, ㅇ (H, A. Gestal, MCN 7476); Triunfo, 20 Oct. 1947, \& (T. Arigony, MCN 6907).

## Ocrepeira lisei new species

Figures 232-235; Map 5
Holotype. Female holotype from Canela, Rio Grande do Sul State, Brazil, 26 Dec. 1974 (A. A. Lise), in MCN no. 10569. The species is named after the collector.
Description. Female holotype. Carapace orange-brown, cephalic region and sides of thoracic region darker. Chelicerae distally dark brown. Labium, endites brown. Sternum orange-brown, lightest in center. Coxae orange-brown; legs orangebrown with darker patches. Dorsum of abdomen whitish with dark spots and posterior transverse bars (Fig. 235); venter black. Posterior median eyes 1.2 diameters of anterior medians, laterals 0.7 diameter. Anterior median eyes 1.2 diameters apart. Posterior median eyes 1.5 diameters apart. Posterior median eyes on swelling and facing laterally. Ocular quadrangle wider behind than in front. Lateral eyes separated by their diameter. Height of clypeus equal to 1.2 diameters of anterior median eyes. Abdomen with pair of anterior-facing tubercles (Fig. 235). Total length 6.6 mm . Carapace 2.8 mm long, 2.3 wide, 1.5 wide behind lateral eyes. First femur 2.4 mm , patella and tibia 3.0 , metatarsus 1.8 , tarsus 0.7 . Second patella and tibia 2.7 mm , third 1.7, fourth 2.7. Abdomen 6.5 mm long.

Variation. Total length of females 5.2 to 7.7 mm . The illustration was made from the holotype.

Diagnosis. Ocrepeira lisei differs from O. gnomo (Fig. 225) by having the lateral plates overlapping in posterior view of the epigynum (Fig. 233), and from O. pinhal (Fig. 212) by a scape with parallel sides (Fig. 232).

Specimens Examined. BRAZIL Rio de Janeiro: Petrópolis, Dec. 1945, \& (H. Sick, AMNH); Mar. 1946, o (H. Sick, AMNH). Santa Catarina: Pinhal, Dec. 1947, 2q, Jan. 1948, 39 (A. Maller, AMNH). Rio Grande do Sul: Bagé, 23 Oct. 1981, 8 (A. A. Lise, MCN 9964); Porto Alegre, \& (P. Buck, MNRJ).

## Ocrepeira gulielmi new species Figures 236-242; Map 5

Holotype. Female holotype, paratypes: two females and four males from La Planada, 7 km S of Choconés, Depto. Nariño, Colombia, July 1986 (W. Eberhard), in MCZ. The species is named after colleague William Eberhard, the collector.
Description. Female holotype. Carapace light orange, cephalic region dusky with light setae. Chelicerae dusky orange. Labium, endites orange. Sternum, coxae light orange. Legs light orange, distal articles dusky. Anterior of dorsum of abdomen dark, posterior with five pairs of black spots emphasized by light rings (Fig. 239); venter black with a pair of white bands (Fig. 240). Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart, 1.3 diameters from laterals. Posterior median eyes their diameter apart, 2.5 diameters from laterals. Posterior median eyes on a swelling. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 0.8 diameter of anterior median eyes. Abdomen with indistinct humps (Fig. 239). Total length 5.0 mm . Carapace 2.3 mm long, 1.7 wide, 1.0 wide behind lateral eyes. First femur 2.3 mm , patella and tibia 2.9 , metatarsus 1.9, tarsus 0.9. Second patella and tibia 2.1 mm , third 1.3, fourth 1.7.

Male paratype from type locality. Color as in female, but legs faintly ringed. Posterior median eyes same diameter as an-
terior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart, their diameter from laterals. Posterior median eyes 0.8 diameter apart, 1.8 diameters from laterals. Posterior median eyes on slight swelling. Ocular quadrangle square, slightly narrower behind than in front. Fourth coxa with a macroseta on a tubercle. Right fourth trochanter with a macroseta, none on left. Total length 3.8 mm . Carapace 2.1 mm long, 1.7 wide, 0.8 wide behind lateral eyes. First femur 2.5 mm , patella and tibia 2.8, metatarsus 1.6 , tarsus 0.7 . Second patella and tibia 2.3 mm , third 1.1, fourth 1.9.

Note. Males and females were collected together and have similar markings on the abdomen.

Variation. The male described had a macroseta on the right trochanter but not on the left; none of the others had a fourth trochanter macroseta. Total length of females 4.5 to 5.6 mm , of males 3.6 to 3.8 . The illustrations were made from the holotype and from a male from the type locality.

Diagnosis. Unlike that of other species the female scape has a swelling above its tip (Fig. 236). As in O. atuncela (Fig. 254) the posterior median plate has parallel sides (Fig. 237) but differs by a deep groove on each side of its base (Figs. 237, 238). The male differs from that of $O$. steineri (Fig. 240) by the shape of the base of the median apophysis (Fig. 241).

Specimens Examined. COLOMBIA Nariño: La Planada, $1,800 \mathrm{~m}, 7 \mathrm{~km}$ S Choconés, July 1986, \&, 38 paratypes (W. Eberhard, MCZ). ECUADOR Pichincha: Río Faisanes, 15 km NE La Palma, $1,380 \mathrm{~m}$. 17 Feb. 1979, 29 (L. Burnham, MCZ).

## Ocrepeira steineri new species Figures 243-248; Map 5

Holotype. Female holotype, female and male paratypes from Cerro de la Neblina, $1,690 \mathrm{~m}$, Territ. Feder. Amazonas, V'enezuela, 12 Feb. 1985 (W. E. Steiner), in USNMI. The species is named after the collector.

Description. Female holotype. Carapace dark orange with white setae, sides of thoracic region lightest. Chelicerae orange, distally brown. Labium, endites brown. Sternum orange, borders darker. Coxae dusky orange; legs orange with indistinct dark rings. Dorsum of abdomen white, gray, and with black caps on humps and black transverse bars posteriorly (Fig. 246); venter black. Posterior median eyes 1.2 diameters of anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.3 diameters apart. Lateral eyes their diameter apart. Posterior median eyes on swelling. Ocular quadrangle wider behind than in front. Height of clypeus equal to 1 diameter of anterior median eves. Abdomen with tips of humps facing anteriorly (Fig. 246). Total length 4.8 mm . Carapace 2.5 mm long, 1.9 wide, 1.2 wide behind lateral eyes. First femur 2.3 mm , patella and tibia 2.7 , metatarsus 1.8 , tarsus 0.8 . Second patella and tibia 2.4 mm , third 1.4 , fourth 2.2.

Male paratype. Color as in female except without the transverse bars on the abdomen; in its place there is a black folium. Posterior median eyes 1.2 diameters of anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Ocular quadrangle wider behind than in

Figures 236-242. Ocrepeira gulielmin. sp. 236-240, female. 236-238, epigynum. 236, ventral. 237, posterior. 238, lateral. 239, dorsal. 240, abdomen, ventral. 241, 242, left male palpus.

Figures 243-248. O. steinerin. sp. 243-246, female. 243-245, epigynum. 243, ventral. 244, posterior. 245, lateral. 246, dorsal. 247, 248, male palpus.

Figures 249-252. O. macaiba n. sp., female. 249-251, epigynum. 249, ventral. 250, posterior. 251, lateral. 252, dorsal.


Figures 253-256. O. atuncela n. sp., female. 253-255, epigynum. 253, ventral. 254, posterior. 255, lateral. 256, dorsal.
Figures 257-263. O. anta n. sp. 257-261, female. 257-259, epigynum. 257, ventral. 258, posterior. 259, lateral. 260, dorsal. 261 , abdomen, ventral. 262, 263, male palpus.

Scale lines. 1.0 mm , genitalia 0.1 mm .
front. Height of clypeus equal to 1 diameter of anterior median eyes. Fourth coxa with one macroseta. Fourth trochanter with one macroseta. Abdomen as in female but smaller. Total length 4.0 mm . Carapace 2.5 mm long, 2.0 wide, 0.9 wide behind lateral eyes. First femur 2.9 mm , patella and tibia 3.2, metatarsus 1.8, tarsus 0.7. Second patella and tibia 2.8 mm , third 1.7, fourth 2.3.

Note. The male was collected with the female.

Diagnosis. The female is separated from others by the lack of posterior median plate, and by the lateral plates with dorsal projection (Fig. 244). The base of the male's median apophysis (Fig. 247) is shaped differently from that of $O$. gulielmi (Fig. 241).

## Ocrepeira macaiba new species <br> Figures 249-252; Map 5

Holotype. Female holotype from Fazenda Canao, Macaíba, Rio Grande do Norte, Brazil, 15 Sept. 1951 (M. Alvarenga), in MZSP no. 5383. The specific name is a noun in apposition after the type locality.
Description. Female holotype. Carapace light orange, darkest on sides of thoracic region. Chelicerae, labium, endites orange. Sternum orange. Coxae, legs light orange. Dorsum of abdomen white with some dusky transverse bars posteriorly (Fig. 252); venter dusky with a pair of white spots in front of spinnerets, darkest anteriorly above pedicel. Posterior median eyes 1.3 diameters of anterior medians, laterals 0.9 diameter. Anterior median eyes 1.2 diameters apart. Posterior median eyes 1.5 diameters apart. Posterior median eyes on a swelling. Ocular quadrangle wider behind than in front. Height of clypeus equal to 1.2 diameters of anterior median eyes. Abdomen as in Figure 252. Total length 4.3 mm . Carapace 2.1 mm long, 1.8 wide, 1.1 wide behind lateral eyes. First femur 2.1 mm , patella and tibia 2.3 , metatarsus 1.5, tarsus 0.6. Second patella and tibia 2.2 mm , third 1.4, fourth 2.0 .

Diagnosis. Ocrepeira macaiba differs
from $O$. steineri (Fig. 244) in the shape of the lateral plates of the epigynum (Fig. 250).

## Ocrepeira atuncela new species Plate 1; Figures 253-256; Map 5

Holotype. Female from above Atuncela, $1,800 \mathrm{~m}$, cloud forest, Depto. Valle, Colombia, 15 Mar. 1969 (W. Eberhard, no. 173p), in MCZ. The specific name is a noun in apposition after the type locality.
Description. Female holotype. Carapace, chelicerae, labium, endites yellowish. Sternum yellowish. Coxae, legs yellowish, distally darker. Dorsum of abdomen light yellow with anterior dark marks, and with two indistinct longitudinal dusky bands (Fig. 256); venter with a black square between epigynum and spinnerets. Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Lateral eyes 0.3 diameter apart. Posterior median eyes on swelling. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen shieldshaped with scattered long setae (Fig. 256). Total length 4.8 mm . Carapace 2.4 mm long, 1.9 wide, 1.1 wide behind lateral eyes. First legs lost. Second patella and tibia 2.7 mm , third 1.6, fourth 2.6 .

Diagnosis. The epigynum of this female (Figs. 254, 255) differs from that of $O$. gulielmi by lacking the deep groove on the side of the base (Figs. 237, 238). The abdomen is differently marked and shaped (Fig. 256).

Natural History. Plate 1 illustrates the orb web.

## Ocrepeira anta new species <br> Figures 257-263; Map 5

Holotype. Female holotype and male paratype from Alto de Minas, 30 km S of Medellin, 2,700 m, Depto. Antioquia, Colombia, 27 Aug. 1963 (P. B. Schneble), in MCZ. The specific name is an arbitrary combination of letters.
Description. Female holotype. Carapace, chelicerae, labium, endites yellow-
ish. Sternum yellow. Legs yellowish. Dorsum of abdomen white with pairs of dark spots, each surrounded by a light ring (Fig. 260); venter dusky with a pair of white spots (Fig. 261). Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 1.2 diameters apart. Posterior median eyes their diameter apart. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 1.1 diameters of anterior median eyes. Abdomen with indistinct humps (Fig. 260). Total length 5.5 mm . Carapace 2.5 mm long, 2.1 wide, 1.1 wide behind lateral eyes. First femur 2.5 mm , patella and tibia 2.9, metatarsus 2.0, tarsus 0.8 . Second patella and tibia 2.7 mm , third 1.5, fourth lost.

Male paratype. Color as in female. Posterior median eyes 0.9 diameter of anterior medians, anterior laterals 0.7 diameter, posterior laterals 0.6. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Ocular quadrangle slightly longer than wide, slightly narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Fourth coxa with one macroseta. Fourth trochanter with one macroseta. Total length 4.2 mm . Carapace 2.0 mm long, 1.6 wide, 0.9 wide behind lateral eyes. First femur 2.3 mm , patella and tibia 2.7 , metatarsus 1.7 , tarsus 0.7 . Second patella and tibia 2.2 mm , third 1.3 , fourth 1.9 .

Note. Males and females were collected together.

Variation. Total length of females 5.2 to 5.5 mm . Illustrations were made from the holotype and from the male collected with it.

Diagnosis. The female differs from that of other species by the narrow, sclerotized median plate of the epigynum (Fig. 258) and the short semicircular scape (Fig. 257). The male differs by the shape of the terminal and median apophyses (Figs. 262, 263).

Specimens Examined. COLOMBIA Antioquia: Guarne, $2,000 \mathrm{~m}$, July-Aug. 1976, 2 ㅇ (P. Schneble, MCZ).

## Ocrepeira barbara new species

 Figures 264-268; Map 6Holotype. Female holotype from "El Abiseo", Rio Montecristo campsite, La Playa, Parque Nacional Rio Abiseo, Depto. San Martín, Peru, 19 Aug. 1987 (B. Roth), in MUSM. The specific name is a noun in apposition after the collector.
Description. Female holotype. Carapace light orange with short, white setae, darkest in eye region. Chelicerae, labium, endites light orange. Sternum orange, dusky around border. Coxae, legs dusky orange. Dorsum of abdomen with dark mark between tubercles, posterior with pairs of black streaks and indistinct transverse darker bands (Fig. 267); venter with a pair of white spots posteriorly (Fig. 268). Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.9 diameter apart. Posterior median eyes 0.9 diameter apart. Posterior median eyes on swelling. Ocular quadrangle square. Height of clypeus equal to 1.3 diameters of anterior median eyes. Abdomen with small humps (Fig. 267). Total length 8.2 mm . Carapace 3.6 mm long, 2.8 wide, 1.7 wide behind lateral eyes. First femur 3.6 mm , patella and tibia 4.7, metatarsus 3.1, tarsus 1.3. Second patella and tibia 4.2 mm , third 2.6 , fourth 3.7 .

Variation. Total length of females 5.8 to 8.2 mm . The specimen from Pumamarca lacks the white spots on the underside. The illustrations were made from the holotype.

Diagnosis. The female differs from others by the drop-shaped scape of the epigynum (Fig. 264) and by the median divisions of the posterior median plate (Fig. 265).

Specimen Examined. PERU Junín: Pumamarca, \& (K. Jelski, J. Sztoleman, PAN).

## Ocrepeira macintyrei new species Figures 269-271; Map 6

Holotype. Male holotypes from Baños, 2,200-2,500 m, Tungurahua Prov., Ecuador, Apr. 1939 (W. C. Macintyre), in MCZ. The species is named after the collector.

Description. Male holotype. Carapace orange, anterior of cephalic region and anterior of sides of thoracic region darker. Chelicerae, labium, endites orange. Sternum orange with dusky margin. Coxae orange; legs orange with brown rings. Abdomen with white cardiac mark, a black outline of folium, darker inside of folium than outside; venter gray with a pair of round white spots. Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes 0.8 diameter apart. Ocular quadrangle longer than wide, narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Fourth coxa with one macroseta on tubercle. Fourth trochanter with one macroseta. Abdomen with anterior lateral tubercles (Fig. 271). Total length 6.2 mm . Carapace 3.3 mm long, 2.7 wide, 1.4 wide behind lateral eyes. First femur 3.8 mm , patella and tibia 4.3, metatarsus 2.7, tarsus 1.3. Second patella and tibia 3.6 mm , third 2.1 , fourth 3.1 .

Diagnosis. The sickle-shaped terminal apophysis and the swelling at the base of the median apophysis (Fig. 269) separate O. macintyrei from other species.

## Ocrepeira tungurahua new species Figures 272-277; Map 6

Holotype. Female holotype, one female and one male paratype from Tungurahua, $2,600 \mathrm{~m}$, Tungurahua Prov., Ecuador, 6 May 1939 (W. Clarke-Macintyre), in AMNH. The specific name is a noun in apposition after the type locality

Description. Female holotype. Carapace dark orange, with darker streaks, darkest at lateral eyes. Chelicerae, labium, endites dark orange. Sternum dark orange. Coxae, legs orange. Dorsum of abdomen orange-white with pairs of dark spots, the posteriormost pair connected by a transverse line (Fig. 275); venter dusky with indistinct pair of white longitudinal lines. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes 0.7 diameter apart. Ocular quadrangle slightly narrower behind than in front. Height of cly peus equal to 1 diameter of anterior median eyes. Abdomen as in Figure 275. Total length 6.4 mm . Carapace 2.7 mm long, 2.3 wide, 1.4 wide behind lateral eyes. First femur 3.0 mm , patella and tibia 3.8, metatarsus 2.1, tarsus 1.1. Second patella and tibia 3.3 mm , third 1.9 , fourth 2.9.

Male paratype from type locality. Color as in female but legs with faintly darker rings. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.7 diameter apart. Posterior median eyes their diameter apart. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 0.8 diameter of anterior median eyes. Fourth coxa with one macroseta on a tubercle. Fourth trochanter with one macroseta. Total length 5.4 mm . Carapace 2.4 mm long, 2.1 wide, 1.1 wide behind lateral eyes. First femur 2.9 mm , patella and tibia 3.2, metatarsus 2.0 , tarsus 0.9 . Second patella and tibia 2.9 mm , third 1.6 , fourth 2.3.

Figures 264-268. Ocrepeira barbara n. sp., female. 264-266, epigynum. 264, ventral. 265, posterior. 266, lateral. 267, dorsal. 268, abdomen, ventral.

Figures 269-271. O. macintyrei n. sp., male. 269, 270, male left palpus. 271, dorsal.
Figures 272-277. O. tungurahua n. sp. 272-275, female. 272-274, epigynum. 272, ventral. 273, posterior. 274, lateral. 275, dorsal. 276, 277, male palpus.

Figures 278-283. O. valderramai n. sp. 278-281, female. 278-280, epigynum. 278, ventral. 279, posterior. 280, lateral. 281, dorsal. 282, 283, male palpus.

Figures 284-286. O. jamora n. sp., male. 284, 285, palpus. 286, dorsal.


Figures 287-289. O. pista n. sp., male. 287, 288, palpus. 289, dorsal.
Scale lines. 1.0 mm , genitalia 0.1 mm .

Note. The male was collected with the female.

Diagnosis. The female differs from that of $O$. barbara by the circular shape of the posterior median plate (Fig. 273); the male differs from that of other species by the loop of the terminal apophysis and the shape of the base of the median apophysis (Fig. 276).

## Ocrepeira valderramai new species Figures 278-283; Map 6

Holotype. Male holotype with immature female on web in vegetation, from Paramo de Chingaza, Monteredondo, $3,100 \mathrm{~m}$, Depto. Cundinamarca, Colombia, 20 July 1986 (C. Valderrama), in MCZ. The species is named after the collector.
Description. Female from Paramo de Monteserrate. Carapace brownish black with sides of thoracic region yellowish. Chelicerae, labium, endites dark brown. Sternum dark brown, lighter in center. Coxae yellowish; legs yellowish with brown rings and patches. Dorsum of abdomen with black marks and a white triangle (Fig. 281); venter black with a pair of white spots. Posterior median eyes 1.2 diameters of anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes 0.9 diameter apart. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen with a pair of lateral humps (Fig. 281). Total length 7.0 mm . Carapace 2.9 mm long, 2.3 wide, 1.3 wide behind lateral eyes. First femur 3.1 mm , patella and tibia 3.8, metatarsus 2.5 , tarsus 1.1. Second patella and tibia 3.4 mm , third 2.1 , fourth 3.0 .

Male holotype. Color darker than in female. Carapace with paired dark streaks. Abdomen with a dark, dorsal folium. Posterior median eyes 1.2 diameters of anterior medians, anterior laterals 1.2 diameters, posterior laterals 1 diameter. Anterior median eyes their diameter apart. Posterior median eyes 0.8 diameter apart. Posterior median eyes on a swelling. Ocular quadrangle narrower behind than in front.

Height of clypeus equal to 0.9 diameter of anterior median eyes. Fourth coxa with one macroseta. Fourth trochanter without macroseta. Total length 5.0 mm . Carapace 2.7 mm long, 2.3 wide, 1.1 wide behind lateral eyes. First femur 3.1 mm , patella and tibia 3.9, metatarsus 2.5, tarsus 1.1. Second patella and tibia 3.1 mm , third 1.9 , fourth 2.6 .

Note. The male and the females were collected from the same locality.

Variation. The epigynum of the paratype illustrated is asymmetrical (Fig. 278). A penultimate female, just before the molt, had an oval scape narrow at both ends, the posterior median plate slightly wider and shorter than the one illustrated. Total length of males 5.0 to 5.2 mm . The illustrations were made from the male holotype and from a female from Paramo de Monserrate.

Diagnosis. The female differs from others with a narrow posterior median plate, O. anta (Figs. 257-259) and O. planada (Figs. 290-292), by the shape of the epigynal scape in ventral view (Fig. 278) and lateral view (Fig. 280). The male differs from those of O. pista (Figs. 287, 288) and O. tungurahua (Figs. 276, 277) by the raised triangular sculpturing of the base of the median apophysis (Fig. 282).

Natural History. One specimen was hanging in vegetation in a cloud forest, others in orb webs between flowers and leaves of Espeletia grandiflora.

Specimens Examined. COLOMBIA Cundinamarca: Paramo de Monserrate, 7.5 km NE Bogotá, in natural vegetation, $04^{\circ} 15^{\prime} \mathrm{N}, 74^{\circ} 01^{\prime} \mathrm{W}, 13$ Sept. 1986, of (H. Sturm, MCZ); Paramo de Chingaza, 3,400 $\mathrm{m}, 04^{\circ} 31^{\prime} \mathrm{N}, 73^{\circ} 45^{\prime} \mathrm{W}, 14 \mathrm{Apr}$. 1986 , $\mathrm{imm} .$, 15 Apr. 1986, \& paratype, 22 Mar. 1987, 2 imm., $3,100 \mathrm{~m}, 23$ Mar. 1987, o paratype (all C. Valderrama, CV, MCZ).

## Ocrepeira jamora new species Figures 284-286; Map 6

Holotype. Male holotype from Cerro Tinajillas, 3, 100 m, S of Cuenca, Azuay Prov., Ecuador (L. Peña), in MCZ. The specific name is an arbitrary combination of letters.

Description. Male holotype. Carapace orange with white setae, anterior of cephalic region and sides of thoracic region darkest. Chelicerae, labium, endites dark orange. Sternum orange-brown. Coxae, legs orange with darker rings. Abdomen with white cardiac mark and brown outline of folium (Fig. 286); venter gray with a pair of white patches. Posterior median eyes 1.3 diameters of anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes 0.8 diameter apart. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 0.8 diameter of anterior median eyes. Fourth coxa with one macroseta on a tubercle. Fourth trochanter without macroseta. Total length 5.0 mm . Carapace 2.5 mm long, 2.0 wide, 1.3 wide behind lateral eyes. First femur 3.0 mm , patella and tibia 3.4, metatarsus 1.9, tarsus 0.8 . Second patella and tibia 2.8 mm , third 1.7, fourth 2.3.

Note. Illustrations were made from the holotype.

Diagnosis. Ocrepeira jamora differs from other male Ocrepeira by the shape of the terminal and median apophyses (Figs. 284, 285).

Specimen Examined. ECUADOR Tungurahua: Tungurahua, $2,600 \mathrm{~m}, 6$ June 1939, ô (W. Clarke-Macintyre, AMNH).

## Ocrepeira pista new species <br> Figures 287-289; Map 6

Holotype. Male holotype and one male paratype from Machupicchu, above ruins, 2,600-2,800 m, Depto. Cuzco, Peru, 1-5 July 1964, beaten from vegetation, (B. Malkin), in AMNH. The specific name is an arbitrary combination of letters.
Description. Male holotype. Carapace reddish brown, sides of thoracic region black with some white setae. Chelicerae dark brown. Labium, endites, sternum dark orange. Legs dark orange with darker patches. Dorsum of abdomen with white cardiac spot and dark folium (Fig. 289); venter black with a pair of contrasting white spots. Posterior median eyes same diameter as anterior medians, laterals 0.8
diameter. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1.1 diameters of anterior median eyes. Fourth coxa with one macroseta on a tubercle. Total length 6.7 mm . Carapace 3.9 mm long, 3.0 wide, 1.5 wide behind lateral eyes. First femur 3.9 mm , patella and tibia 4.7, metatarsus 2.8, tarsus 1.3. Second patella and tibia 4.0 mm , third 2.6, fourth 3.6.

Diagnosis. Ocrepeira pista differs from the male of $O$. valderramai by the large lower prong of the median apophysis and the semicircular offset near its base (Figs. 287, 288).

## Ocrepeira planada new species <br> Figures 290-296; Map 6

Holotype. Female from La Planada, $1,800 \mathrm{~m}, 7 \mathrm{~km}$ S of Choconés, Depto. Nariño, Colombia, July 1986 (W. Eberhard, 3358), in MCZ. The specific name is a noun in apposition after the type locality
Description. Female holotype. Carapace orange, posterior of cephalic region dusky, darkest between median and lateral eyes. Chelicerae light orange. Labium, endites orange. Sternum dusky orange. Coxae orange; legs with darker and lighter rings and patches. Dorsum of abdomen with folium and white cardiac mark (Fig. 293); venter dusky with a pair of white spots (Fig. 294). Posterior median eyes 0.9 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart, 2 diameters from laterals. Posterior median eyes their diameter apart, 3.5 diameters from laterals. Ocular quadrangle slightly longer than wide, narrower behind than in front. Height of clypeus equal to 0.7 diameter of anterior median eyes. Abdomen with a pair of humps (Fig. 293). Total length 9.2 mm . Carapace 3.9 mm long, 3.1 wide, 1.7 wide behind lateral eyes. First femur 3.8 mm , patella and tibia 4.8, metatarsus 3.3, tarsus 1.3. Second patella and tibia 4.4 mm , third 2.7 , fourth 4.2 .

Male from Río Calima, Valle, Colombia.

Color as in female. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.8 diameter apart, 1.5 from laterals. Posterior median eyes their diameter apart, 3.5 from laterals. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 0.6 diameter of anterior median eyes. Fourth coxa with large posterior tubercle bearing a macroseta. Abdomen as in female. Total length 6.8 mm . Carapace 4.4 mm long, 3.5 wide, 1.7 wide behind lateral eyes. First femur 4.7 mm , patella and tibia 5.5, metatarsus 3.1, tarsus 1.3. Second patella and tibia 4.6 mm , third 2.8 , fourth 3.7.

Note. Males and females were matched because of similar markings.

Variation. Total length of females 6.5 to 10.2 mm , of males 5.9 to 6.8 . Illustrations were made from the female holotype and a male from the type locality.

Diagnosis. Females can be separated from others with a narrow median posterior plate (Fig. 291) by the long scape having parallel sides and an attachment near the anterior of the base of the epigynum (Figs. 290-292). The male can be separated by the distinctly shaped terminal and median apophyses (Figs. 295, 296).

Specimens Examined. COLOMBIA Cundinamarca: road Fusagasuga to Anolaima, $2,800 \mathrm{~m}, 2$ Sept. 1969 , $\xlongequal[\text { (P., B. W }]{\text { y- }}$ godzinsky, AMNH). Valle: Río Calima, nr. Lago Calima, $1,400 \mathrm{~m}$, June 1976, ô (W. Eberhard, MCZ). Nariño: La Planada,

1,800 m, 7 km S Chocones, July 1986, 58, ô paratypes (W. Eberhard, 3347, MCZ). ECUADOR Pichincha: Quebrada La Plata, 2.1 km E Tandapi, $1,550 \mathrm{~m},\left[00^{\circ} 25^{\prime} \mathrm{N}\right.$, $78^{\circ} 47^{\prime} \mathrm{W}$ W, 3 Feb. 1979, 9 (L. Burnham, MCZ). Napo: 6.5 km S Baeza, $1,810 \mathrm{~m}$, Feb. 1979, 9 (L. Burnham, MCZ). Río Yocuchiqui [?], W slope of Andes, \& (MCZ).

## Ocrepeira ituango new species Figures 297-301; Map 6

Holotype. Female holotype from Municipio de Ituango, $1,450 \mathrm{~m}$, Depto. Antioquia, Colombia, 26 May 1989 (M. A. Serna), in MCZ. The specific name is a noun in apposition after the type locality.
Description. Female holotype. Carapace orange, cephalic region with a black circular patch, black between median and lateral eyes. Chelicerae dark brown. Labium, endites dark brown. Sternum dark brown. Coxae orange with dark patches; legs orange with dark rings. Dorsum of abdomen damaged, with white cardiac mark (Fig. 300); venter black with a pair of white spots (Fig. 301). Posterior median eyes 0.7 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.8 diameter apart, 2.8 diameters from laterals. Posterior median eyes 0.8 diameter apart, 4.5 diameters from laterals. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen as in Figure 300 . Total length 10.4 mm . Carapace 4.0 mm long, 3.5 wide, 1.9 wide

Figures 290-296. Ocrepeira planada n. sp. 290-294, female. 290-292, epigynum. 290, ventral. 291, posterior. 292, lateral. 293, dorsal. 294, abdomen, ventral. 295, 296, left male palpus.

Figures 297-301. O. ituango n. sp., female. 297-299, epigynum. 297, ventral. 298, posterior. 299, lateral. 300, dorsal. 301, abdomen, ventral.

Figures 302-307. O. saladito n. sp. 302-305, female. 302-304, epigynum. 302, ventral. 303, posterior. 304, lateral. 305, dorsal. 306, 307, male palpus.

Figures 308-314. O. cuy n. sp. 308-312, female. 308-310, epigynum. 308, ventral. 309, posterior. 310, lateral. 311, dorsal. 312 , abdomen, ventral. 313, 314, male palpus.

Figures 315-320. O. abiseo n. sp. 315-318, female. 315-317, epigynum. 315, ventral. 316, posterior. 317, lateral. 318, dorsal. 319,320 , male palpus.

Scale lines. 1.0 mm , genitalia 0.1 mm .

behind lateral eyes. First femur 4.3 mm , patella and tibia 5.4, metatarsus 3.5, tarsus 1.3. Second patella and tibia 5.0 mm , third 3.1, fourth 4.6 .

Diagnosis. The female can be separated from O. planada (Figs. 290-292) by the posterior lateral plates of the epigynum which touch each other (Fig. 298).

## Ocrepeira saladito new species Figures 302-307; Map 6

Holotype. Female from near Saladito, $1,800 \mathrm{~m}$, Depto. Valle, Colombia, Jan. 1977, (W. Eberhard, 1139), in MCZ. The specific name is a noun in apposition after the type locality.
Description. Female holotype. Carapace, chelicerae, labium, endites yellowish. Sternum yellowish. Coxae, legs yellowish with indistinct dusky rings. Dorsum of abdomen with anterior of each side black and posteriorly six pairs of spots highlighted by white rings, alternating black and red, first pair black, last pair red (Fig. 305); venter dusky, black in median area. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 1.3 diameters apart. Posterior median eyes 1.1 diameters apart. Laterals separated by half their diameter. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1 diameter of the anterior median eyes. Abdomen as in Figure 305. Total length 4.7 mm . Carapace 2.3 mm long, 1.7 wide, 1.1 wide behind lateral eyes. First femur 2.5 mm , patella and tibia 2.8 , metatarsus 1.8, tarsus 0.9. Second patella and tibia 2.4 mm , third 1.3, fourth 2.0 .

Male from type locality. Color and markings as in female. Posterior median eyes same diameter as anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart, 1.2 diameters from laterals. Posterior median cyes their diameter apart, 2 diameters from laterals. Ocular quadrangle square. Height of clypeus equal to 1 diameter of anterior median eyes. Fourth coxa with one macroseta. Fourth trochanter with one macroseta. Abdomen as in female. Total length 4.2 mm .

Carapace 2.1 mm long, 1.7 wide, 0.8 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.0, metatarsus 1.8 , tarsus 0.8 . Second patella and tibia 2.2 mm , third 1.3, fourth 1.7.

Note. Males and females came from the same locality and have similar distinctive markings on the abdomen.

Variation. The second female has the base of the epigynum more oval; the scape has parallel sides. Total length of males 4.0 to 4.2 mm .

Diagnosis. The female differs from others by the wide posterior median plate (Fig. 303), the male by the shape of the terminal and median apophyses (Figs. 306, 307)

Paratypes. COLOMBIA Valle: above Saladito, $1,800 \mathrm{~m}, 1975$, ㅇ, 1979, of (W. Eberhard, MCZ).

## Ocrepeira cuy new species <br> Figures 308-314; Map 6

Holotype. Male holotype and female paratype from Pampa del Cuy, montane forest, Parque Nacional Abiseo, $3,550 \mathrm{~m}$, Depto. San Martín, Peru, 5-12 Mar. 1955 (D. Silva D.), in MUSM. The specific name is a noun in apposition after the type locality.

Description. Female paratype collected with male. Carapace orange-yellow, with a dark patch on each side and long white setae above lateral eyes; clypeus dark. Chelicerae dark brown. Labium, endites brown. Sternum orange in center, dark all around. Coxae yellowish; legs yellowish with brown rings and black patches. Dorsum of abdomen with dark spot on each tubercle and paired dark streaks posteriorly (Fig. 311); venter with a pair of white marks (Fig. 312). Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes slightly more than their diameter apart Posterior median eyes on swelling. Ocular quadrangle slightly longer than wide Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen as in Figure 311. Total length 8.0 mm . Carapace 3.4 mm long, 2.9 wide, 1.6 wide behind lateral eyes. First femur 3.4 mm , patella
and tibia 4.3, metatarsus 2.7, tarsus 0.9. Second patella and tibia 3.7 mm , third 2.3, fourth 3.2.

Male holotype. Color as in female. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eves their diameter apart. Posterior median eyes on swelling. Ocular quadrangle square. Height of clypeus equal to 0.9 diameter of anterior median eyes. Fourth coxa with one macroseta. Fourth trochanter without macroseta. Total length 6.2 mm . Carapace 3.2 mm long, 2.7 wide, 1.3 wide behind lateral eyes. First femur 3.7 mm , patella and tibia 4.0 , metatarsus 2.6, tarsus 1.0. Second patella and tibia 3.1 mm , third 1.9 , fourth 2.7 .

Note. Males and females were collected together.

Variation. Total length of females 8.0 to 8.3 mm , of males 5.9 to 6.2 . The illustrations were made from the male holotype and a female paratype.

Diagnosis. The female has a smaller scape (Fig. 308) than the very similar $O$. abiseo (Fig. 315). The male differs from O. abiseo (Figs. 319, 320) by having both prongs of the median apophysis about the same length (Figs. 313, 314).

Paratypes. All from type locality: 8 Mar. 1988, 5q, 2 Mar. 1988, oे (all D. Silva D., MUSM).

## Ocrepeira abiseo new species Figures 315-321; Map 6

Holotype. Male holotype, four female paratypes, from Parque Nacional Abiseo, Puerta del Monte, 3,300 m, Depto. San Martín, Peru, 4 Mar. 1988 (D. Silva D., A. Salirrosas), in MUSM. The specific name is a noun in apposition after the type locality.
Description. Female paratype collected with male. Carapace orange, with a dark patch on each side, posterior of cephalic region, sides of cephalic and thoracic region dark, white hair-like setae behind lateral eyes. Chelicerae dark brown with median light patch. Labium black, endites brown to orange. Sternum orange in middle, each side dark brown. Coxae yellowish
with brown patches; legs yellowish with dark brown rings and patches. Dorsum of abdomen with white cardiac mark and with folium outline posteriorly (Fig. 318); venter with pair of light patches posteriorly. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart. Posterior median eyes 0.8 diameter apart. Ocular quadrangle narrower behind than in front. Posterior median eyes on slight swelling. Height of clypeus equal to 1.2 diameters of anterior median eyes. Abdomen with pair of humps (Fig. 318). Total length 10.2 mm . Carapace 4.2 mm long, 3.4 wide, 1.8 wide behind lateral eyes. First femur 4.4 mm , patella and tibia 5.2 , metatarsus 3.3, tarsus 1.3. Second patella and tibia 4.8 mm . third 2.9 , fourth 4.2 .

Male holotype. Color as in female, but legs light orange. Posterior median eyes same diameter as anterior medians, anterior laterals 0.8 diameter, posterior laterals 0.6. Anterior median eyes 0.8 diameter apart, 1.5 diameters from laterals. Posterior median eyes 0.7 diameter apart. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Fourth coxa with one macroseta on a tubercle. Fourth trochanter without macroseta. Abdomen with pair of tubercles. Total length 8.2 mm . Carapace 4.4 mm long, 3.6 wide, 1.8 wide behind lateral eyes. First femur 4.3 mm , patella and tibia 5.4 , metatarsus 3.5, tarsus 1.3. Second patella and tibia 4.5 mm , third 2.7, fourth 3.7.

Note. Males and females were collected together.

Variation. Total length of females 8.1 to 10.8 mm , of males 6.1 to 8.2 . The scape of the epigynum (when present) is variable in shape; it is torn off from most individuals. The illustrations were made from the male holotype and the female collected with it.

Diagnosis. Females can be confused with those of O. cuy (Figs. 308-310) and O. tinajillas (Figs. 322-324); they differ by having a larger scape (Fig. 315) than that of O. cuy and a shorter scape (Fig. 317)
than that of O. tinajillas (Fig. 324). The male differs from that of A. cuy (Figs. 313. 314) by having one prong of the median apophysis longer than the other (Figs. 319321) and from O. tina jillas (Figs. 327, 328) by the differently shaped tegulum and median apophysis (Figs. 319, 320).

Natural History. The collecting sites were montane forest.

Specimens Examined. PERU San Martín: Parque Nacional Abiseo, Puerta del Monte, $3,300 \mathrm{~m}, 4$ Mar. 1988, 59 paratypes, 13 Mar. 1988, 8̊, $2 \delta$ paratypes, 14 Mar. 1988, o paratype (D. Silva D., A. Salirrosas, MUSM); Pampa del Cuy, 3,550 m, 5-12 Mar. 1988 , 29, ô (D. Silva D., MUSM).

## Ocrepeira tinajillas new species Figures 322-328; Map 6

Holotype. Female holotype and male paratype and one immature from Cerro Tinajillas, $3,100 \mathrm{~m}$, S of Cuenca, Azuay Prov., Ecuador, 18-21 Mar. 1965 (L. Peña), in MCZ. The specific name is a noun in apposition after the type locality.
Description. Female holotype. Carapace orange. Chelicerae orange Labium, endites brown. Sternum orange, brown around border. Coxae orange and brown; legs orange with brown rings. Dorsum of abdomen with a dark sickle-shaped area anteriorly between tubercles and a small posterior folium (Fig. 325); venter dusky with a pair of white spots (Fig. 326). Eyes subequal. Anterior median eyes 1.2 diameters apart. Posterior median eyes their diameter apart. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 1.2 diameters of anterior median eyes. Abdomen subspherical, with widely separated humps (Fig. 325). Total length 8.2 mm . Carapace 3.7 mm long, 2.8
wide, 1.8 wide behind lateral eyes. First femur 3.6 mm , patella and tibia 4.7 , metatarsus 3.1, tarsus 1.3. Second patella and tibia 4.2 mm , third 2.5 , fourth 3.8 .

Male paratype. Color as in female, but abdomen with a white cardiac mark and pairs of dark patches posteriorly. Posterior median eyes 1.2 diameters of anterior medians, anterior laterals 0.9 diameter, posterior laterals 0.8. Anterior median eyes 1.2 diameters apart. Posterior median eyes their diameter apart. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 1.2 diameters of anterior median eyes. Fourth coxa with one macroseta on a tubercle. Fourth trochanter without macroseta. Total length 6.4 mm . Carapace 3.8 mm long, 3.1 wide, 1.5 wide behind lateral eyes. First femur 3.9 mm , patella and tibia 4.7 , metatarsus 2.7 , tarsus 1.1. Second patella and tibia 3.8 mm , third 2.4, fourth 3.4.

Note. The male was collected with the female.

Variation. Total length of females 6.2 to 8.7 mm , of males 4.5 to 6.4. The scape of the second female's epigynum has parallel sides and is distally rounded; also the embolus and the conductor of the second male are of slightly different shape. The illustrations were made from the female holotype and the male paratype collected with it.

Diagnosis. The epigynum of O. tinajillas (Figs. 322-324) has a longer scape than that of $O . c u y$ (Fig. 310) and O. abiseo (Fig. 317). The male has differently shaped tegulum and terminal apophysis (Figs. 327, 328) from those of O. abiseo (Figs. 319, 321).

Specimens Examined. COLOMBIA Valle: Arriba de Saladito, 1973, ô (W.

Figure 321. Ocrepeira abiseon. sp., male palpus; embolus (E), terminal apophysis (A), conductor (C), and paramedian apophysis (PM).

Figures 322-328. O. tinajillas n. sp. 322-326, female. 322-324, epigynum. 322, ventral. 323, posterior. 324, lateral. 325, dorsal. 326 , abdomen, ventral. 327, 328, left male palpus.

Figures 329-333. O. darlingtoni (Bryant). 329-332, female. 329-331, epigynum. 329, ventral. 330, posterior. 331, lateral. 332, dorsal. 333, male palpus.


Figures 334-339. O. magdalena n. sp. 334-337, female. 334-336, epigynum. 334, ventral. 335, posterior. 336, lateral. 337, dorsal. 338, 339, male palpus.

Figures 340-344. O. lapeza n. sp., female. 340-342, epigynum. 340, ventral. 341, posterior. 342, lateral. 343, dorsal. 344, abdomen, ventral.

Figures 345-347. O. aragua n. sp., male. 345, 346, palpus. 347, dorsal.
Scale lines. 1.0 mm , genitalia 0.1 mm .

Eberhard, MCZ). ECUADOR Loja: Zamora, 1,800-2,200 m, 28 Oct. 1977, o (L. Peña, AMNH).

## Ocrepeira darlingtoni (Bryant), new combination <br> Figures 329-333; Map 6

Parawixia darlingtoni Bryant, 1945: 382, figs. 14, 16 (not 21), ô. Male holotype (not female allotype) from Villa Altagracia, Dominican Republic, Hispaniola, in MCZ. Brignoli, 1983: 278.
Wixia darlingtoni Levi, 1992: 8.
Note. The female allotype of Parawixia darlingtoni is the holotype of Aculepeira visite Levi, 1991a: 307.

Description. Female from Valle de Polo, Dominican Republic. Carapace orange, eye region darkest. Chelicerae orange, distally darker. Labium, endites orange. Sternum light orange with brown border. Coxae light orange; legs indistinctly ringed with light orange. Dorsum of abdomen with white anterior median tubercle, dark anterior to a line between lateral tubercles (Fig. 332); venter with a pair of light patches separated by their diameter. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.3 diameters apart. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen with anterior median tubercle [posterior of abdomen damaged] (Fig. 332). Total length 6.5 mm . Carapace 2.7 mm long, 2.1 wide, 1.4 wide behind posterior lateral eyes. First femur 2.7 mm , patella and tibia 3.5 , metatarsus 2.1, tarsus 0.9. Second patella and tibia 3.2 mm , third 1.8 , fourth 2.7 .

Male holotype. Color as in female except thoracic region darker than cephalic region. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.3 diameters apart. Ocular quadrangle narrower behind than in front. Height of clypeus equal to slightly less than 1 diameter of anterior median eyes. Fourth coxa with one macroseta.

Fourth trochanter with one macroseta. Second femur with a ventral row of macrosetae; the most proximal one longer than diameter of femur and on a tubercle. Abdomen without anterior median tubercle. Total length 4.4 mm . Carapace 2.2 mm long, 1.8 wide, 1.0 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.1 , metatarsus 1.9 , tarsus 0.9. Second patella and tibia 2.5 mm , third 1.5 , fourth 2.1 .

Note. Males and females were collected together. The male from Haiti had an additional macroseta on the third coxa and the carapace had symmetrical radiating dark bands originating from thoracic area.

Variation. Total length of females 4.6 to 6.5 mm , of males 4.4 to 4.5 . The female from La Ciénaga had rounded lateral tubercles and some additional pairs of rounded humps on sides. The specimen from near Banano had a more slender epigynum and lacked the median anterior tubercle on the abdomen. Illustrations were made from the male holotype and a female from Valle de Polo.

Diagnosis. The female is contrastingly colored with an anterior median tubercle on the abdomen (Fig. 332) and the epigynum, unlike other species, has a strong glossy, curved scape (Figs. 329-331); the male differs from others by the distinct terminal and median apophyses (Fig. 333).

Specimens Examined. DOMINICAN REPUBLIC Barahona: Valle de Polo, 700$850 \mathrm{~m}, 18$ Aug. 1935, ㅇ, $2 \widehat{\text { ô, imm. (W. G. }}$ Hassler, AMNH). La Vega: La Ciénaga, along Arroyo Frio, $19^{\circ} 04^{\prime} \mathrm{N}, 70^{\circ} 51^{\prime} \mathrm{W}, 8$ Jan. 1986, \& (S. Larcher, F. Mora, C. Domínguez, USNM). Pedernales: La Aguita, 1 km W antes de Cruce del Banana, 14 Aug. 1991 (K. Guerrero, D. Matusik, MNSD). HAITI 40 km from Aux Cayes, 600-900 m, 29 Aug. 1935, of (W. G. Hassler, AMNH).

## Ocrepeira magdalena new species Figures 334-339; Map 6

Holotype. Female holotype from San Pedro, 1,200 m, Sierra Nevada de Santa Marta, Depto. Magdalena, Colombia, 16 May 1975 (J. A. Kochalka),
in MCZ. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace yellowish, darker on cephalic area and sides of thorax, cephalic region with white setae. Chelicerae yellowish, distally darker. Labium, endites dusky. Sternum orange. Coxae yellow; legs yellow with dark rings. Dorsum of abdomen black anteriorly, posterior light with indistinct transverse bars (Fig. 337); sides dark dusky; venter light dusky. Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior median eyes 1.3 diameters apart. Posterior median eyes 1.4 diameters apart. Laterals separated by about 0.4 diameter. Ocular quadrangle, wider than long, wider behind than in front. Posterior median eyes on swelling facing anterolaterally. Height of clypeus equal to 1.3 diameters of anterior median eyes. Abdomen shield-shaped (Fig. 337). Total length 5.7 mm . Carapace 3.0 mm long, 2.5 wide, 1.6 wide behind lateral eyes 1.6. First legs lost. Second patella and tibia 3.2 mm , third 2.0 , fourth 3.0.

Male paratype. Color as in female except carapace darker orange, with white setae and scales in cephalic region, and legs without rings but distally darker. Posterior median eyes 0.8 diameter of anterior medians, anterior laterals 0.7 diameter, posterior laterals 0.7. Anterior median eyes 1.2 diameters apart. Posterior median eyes 1.5 diameters apart. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Third, fourth coxae without macroseta. Abdomen as in female. Total length 3.4 mm . Carapace 2.0 mm long, 1.5 wide, 0.8 wide behind lateral eyes 0.8 wide. First femur 2.9 mm , patella and tibia 3.1 , metatarsus 1.7 , tarsus 0.6. Second patella and tibia 2.6 mm , third 0.3 , fourth 1.7 .

Note. Males and females were matched because they came from the same locality and have similarly shaped abdomens.

Diagnosis. The female differs from that of O. darlingtoni (Figs. 329-331) by hav-
ing a wider scape of the epigynum (Fig. 334) with a sharper curve in lateral view (Fig. 336), the male differs from all other species by having a median apophysis "higher" than long (Figs. 338, 339).

Paratype. From type locality, 19 May 1975, ô (J. A. Kochalka, MCZ).

## Ocrepeira lapeza new species

Plate 1; Figures 340-344; Map 6
Holotype. Female holotype from Hacienda Mozambique, $500 \mathrm{~m}, 15 \mathrm{~km}$ SW of Puerto Lopez, Depto. Meta, Colombia (W. Eberhard, 1491), in MCZ. The specific name is an arbitrary combination of letters.
Description. Female holotype. Carapace orange, dusky between median and lateral eyes, and with paired dusky spots. Chelicerae, labium, endites orange. Sternum dark orange with three pairs of lighter patches. Coxae orange with dusky patches; legs orange, only fourth with dark rings. Dorsum of abdomen black anteriorly with a median brown mark posteriorly (Fig. 343); venter black with two pairs of white spots and a white patch on each side of booklungs (Fig. 344). Posterior median eyes same diameter as anterior medians, laterals 0.9 diameter. Anterior median eyes their diameter apart, 2.5 diameters from laterals. Posterior median eyes their diameter apart, 4 diameters from laterals. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen as in Figure 343. Total length 9.0 mm . Carapace 4.1 mm long, 3.0 wide, 1.8 wide behind lateral eyes. First femur 4.2 mm , patella and tibia 5.2, metatarsus 3.1, tarsus 1.2. Second patella and tibia 4.5 mm , third 2.7, fourth 4.6.

Note. The abdomen of the holotype is damaged and separate from the cephalothorax. The carapace has the spots (Fig. 343), and the sternum the pattern of a Parawixia species (Levi, 1992, fig. 6). The parts probably belong together.

Diagnosis. The female differs from others by having a minute scape and two dark spots in ventral view (Fig. 340).

Natural History. Plate 1 illustrates the orb web of O. lapeza.

## Ocrepeira aragua new species <br> Figures 345-347; Map 6

Holotype. Male holotype from Rancho Grande, near Maracay, Est. Aragua, Venezuela, 14-31 Mar. 1946, in AMNH. The specific name is a noun in apposition after the type locality.
Description. Male holotype. Carapace orange, sides of thoracic region darker. Chelicerae, labium, endites orange. Sternum light orange. Legs orange. Dorsum of abdomen with paired black spots forming outline of a folium (Fig. 347). Posterior median eyes 0.8 diameter of anterior medians, anterior laterals 0.7 diameter, posterior laterals 0.8 . Anterior median eyes 0.9 diameter apart. Posterior median eyes their diameter apart. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Fourth coxa with one macroseta. Fourth trochanter with one macroseta. Abdomen with distinct lateral tubercles (Fig. 347). Total length 3.2 mm . Carapace 1.9 mm long, 1.6 wide, 0.9 wide behind lateral eyes. First femur 2.3 mm , patella and tibia 2.5, metatarsus 1.7, tarsus 0.7 . Second patella and tibia 2.1 mm , third 1.1, fourth 1.8.

Diagnosis. The male differs from others in the projection on the "lower" edge of the widest area of the median apophysis (Figs. 345, 346).

## Ocrepeira maraca new species Figures 348-353; Map 6

Holotype. Female holotype from Estação Ecológica de Maracá, Ilha de Maracá, Rio Uraricoera, Roraima Territ., Brazil, 25 July 1987 (L. P. Albu-
querque), in MCN no. 19282. The specific name is a noun in apposition after the type locality

Description. Female holotype. Carapace orange, cephalic region darkest. Chelicerae, labium, endites orange. Sternum orange. Coxae orange; legs orange. Dorsum of abdomen white, anterior black (Fig. 351 ); venter light dusky. Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes 0.8 diameter apart on only slight swelling. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 0.6 diameter of anterior median eye. Abdomen shield-shaped (Fig. 351). Total length 7.0 mm . Carapace 3.1 mm long, 2.5 wide, 1.5 wide behind lateral eyes. First femur 3.2 mm , patella and tibia 4.0 , metatarsus 2.5, tarsus 1.0. Second patella and tibia 3.7 mm , third 2.0, fourth 3.1.

Male paratype from type locality. Color lighter than in female. Dorsum of abdomen framed by black, sides black grading ventrally into dusky venter. Posterior median eyes 0.9 diameter of anterior medians, anterior laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.1 diameters apart and each on a swelling. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 0.8 diameter of anterior median eyes. Third, fourth coxae each with one long macroseta. Fourth trochanter with one macroseta. Total length 4.7 mm . Carapace 2.5 mm long, 1.9 wide, 0.9 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.2, metatarsus 1.7, tarsus 0.8 . Second patella and tibia 2.6 mm , third 1.5, fourth 2.1 .

Note. Males and females were collected together. The epigynum appears as if the

Figures 348-353. Ocrepeira maraca n. sp. 348-351, female. 348-350, epigynum. 348, ventral. 349, posterior. 350, lateral. 351 , dorsal. 352, 353 , left male palpus.

Figures 354-359. O. yaelae n. sp. 354-358, female. 354-356, epigynum. 354, ventral. 355, posterior. 356, lateral. 357, dorsal. 358, abdomen, ventral. 359, male palpus.

Figures 360-363. O. duocypha (Chamberlin), female. 360-362, epigynum. 360, ventral. 361, posterior. 362, lateral. 363, dorsal.


Figures 364-366. O. jacara n. sp., male. 364, 365, palpus. 366, dorsal.
Figures 367, 368. O. comaina n. sp., male. 367, palpus. 368, dorsal.
Figures 369-371. O. heredia n. sp., male. 369, 370, palpus. 371, dorsal.
Scale lines. 1.0 mm , genitalia 0.1 mm .
tip of the lobe might break when mating, but none were torn.

Variation. Total length of females 5.8 to 9.0 mm , of males 3.9 to 4.7 . Illustrations were made from specimens from Terr. Roraima.

Diagnosis. The posterior median eyes of this species, unlike those of most Ocrepeira species, face dorsally (Fig. 351). The short round scape or lobe of the epigy num, with a dark, curved line at its base (Figs. 348,350 ), and the "deep" position of the posterior median plate (Fig. 349) readily separate females from those of other species. The mate has only a small terminal apophysis and two teeth at the base of the median apophysis (Figs. 352, 353).

Specimens Examined. VENEZUELA Carabobo: San Esteban, 26 Jan. 1940, ô (P. Andruze, AMNH). COLOMBIA César: La Jagua, 15 km S Becerril, 20-21 July 1968, 2 2, 2 imm . (B. Malkin, AMNH). BRAZIL Roraima: Estac. Ecol. Maracá, 29. Mar. 1987, ô paratype (M. E. L. de Souza, INPA). Amazonas: Maués, l Aug. 1983, of (L. P. Alberquerque, INPA); Manaus, Reserva Ducke, Aug. 1971, o (M. E. Galiano, MEG). Pará: Fazenda Velha, Belém, July 1970, \& (M. E. Galiano, MEG); Jacaré-Acanga, Dec. 1968, 3와 (M. Alvarenga, AMNH). Mato Grosso: 260 km N Xavantina, $12^{\circ} 49^{\prime} \mathrm{S}$, $51^{\circ} 46^{\prime} \mathrm{W}, 400 \mathrm{~m}$, Feb.-Apr. 1969, $2 \delta$ (Xav-antina-Cachimbo Exped., MCZ).

## Ocrepeira yaelae new species Figures 354-359; Map 6

Holotype. Male holotype and female paratype from Río Palenque, 47 km SW of Santo Domingo de los Colorados, road to Quevedo, 150 m , Pichincha Prov., Ecuador, 14 Mar. 1982 (Y. D. Lubin, YDL-378), in MCZ. The species is named after collector and colleague Yael Lubin.

Description. Female paratype from Via Puerto Quito. Carapace orange, darker anteriorly; clypeus with dark dusky transverse band. Chelicerae, labium, endites dusky orange. Sternum dusky orange. Coxae, legs dusky orange. Dorsum of abdomen white, anterior black (Fig. 357); sides black, sharply bordered toward dorsum, grading
into dusky venter. Venter with two indistinct white patches (Fig. 358). Posterior median eyes same diameter as anterior medians, anterior laterals 0.7 diameter, posterior laterals 0.6. Anterior median eyes 0.8 diameter apart. Posterior median eyes their diameter apart. Lateral eyes separated by 0.4 diameter of posterior laterals. Posterior median eyes on very slight swelling. Ocular quadrangle square. Height of clypeus equal to 0.6 diameter of anterior median eyes. Abdomen shield-shaped (Fig. 357). Total length 7.0 mm . Carapace 2.8 mm long, 2.4 wide, 1.4 wide behind lateral eyes. First femur 2.9 mm , patella and tibia 3.5, metatarsus 2.2 , tarsus 0.9 . Second patella and tibia 3.4 mm , third 1.9 , fourth 2.7. Abdomen 4.9 mm long.

Male paratype from Pedro Vicente Maldonado. Coloration as in female but carapace with elongate dusky patch on each side of thoracic region, reddish around swollen posterior median eyes. Abdomen with white cardiac mark in center of dark area anterior to and between tubercles, posteriorly with four pairs of streaks outlining a folium. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart, slightly more than 1 diameter from laterals. Posterior median eyes 0.8 diameter apart, slightly more than 2 diameters from laterals. Posterior median eyes on slight swelling facing sides. Third coxa with small macroseta, fourth with macroseta on a tubercle. Fourth trochanter without macroseta. Total length 3.9 mm . Carapace 2.0 mm long, 1.5 wide, 0.8 wide behind lateral eyes. First femur 2.2 mm , patella and tibia 2.5, metatarsus 1.5 , tarsus 0.7 . Second patella and tibia 2.1 mm , third 1.3, fourth 1.8 .

Note. Males and females were collected together.

Variation. The male holotype, not the paratype described, has a macroseta on the fourth trochanter. Total length of females 4.8 to 7.0 mm , of males 3.6 to 3.9. Figures 354-358 were prepared from the paratype from Via Puerto Quito, Figure 359 was
made from the paratype from Pedro Vicente Maldonado.

Diagnosis. The female differs from many Ocrepeira females by having the posterior median eyes face dorsally (Fig. 357), and from all by the weakly sclerotized epigynum having a scape with parallel sides (Fig. 354) and having a very wide posterior median plate framed by small lateral plates (Fig. 355). The male differs from all others by the very distinctive shape of the median apophysis, with a dark round spot on its widest area (Fig. 359).

Natural History. A female was found at night in an asymmetrical vertical orb, 20 cm below hub, 10 cm above; the male holotype was on the periphery of the web. The habitat was dense, old, very wet secondgrowth rain forest understory (Y. Lubin, personal communication). Female paratypes from Tinalandia were hand-collected, the male was collected as a result of beating vegetation.

Specimens Examined. ECUADOR Pichincha: 4 km NE of Pedro Vicente Maldonado, km 113 on road from Quito to Puerto Quito, ENDESA Compartamento Madereiro, $0^{\circ} 05^{\prime} \mathrm{N}, 79^{\circ} 07^{\prime} \mathrm{W}, 9-12$ July, 1988, ô (W. Maddison, MCZ 88-014); Tinalandia, 12 km E Santo Domingo de los Colorados, $750 \mathrm{~m}, ~ 11-17$ May 1986, \&, $\delta$, 5 imm . (G. B. Edwards, FSCA); Via Puerto Quito, km 113, 31 Oct. 1984, of (L. Avilés, MECN). Bolivar: Balzapampa, $700-900$ m, May 1938, \& (W. Clarke-Macintyre, AMNH). Loja: betw. Celica and Alamor. 1,100-2,200 m, 16-17 Aug. 1977, of (L. Peña, AMNH).

## Ocrepeira duocypha (Chamberlin), new combination <br> Figures 360-363; Map 6

Araneus duocyphus Chamberlin, 1916: 256, pl. 18, figs. $8-10$, . Female holotype from Huadquina, $5,000 \mathrm{ft}$ [ $1,500 \mathrm{~m}$ ], Depto. Cuzco, Peru, in MCZ, examined. Bonnet, 1955: 469.
Aranea duocypha:-Roewer, 1942: 841.
Description. Female holotype. Carapace orange. Chelicerae, labium, endites
orange. Sternum orange. Legs orange with faint longitudinal darker lines. Dorsum of abdomen orange-white, anterior to a line between tubercles are dark stipples (Fig. 363); venter light, without marks. Eyes small, subequal. Anterior median eyes 1.8 diameters apart, 1.8 diameters from laterals. Posterior median eyes 1.7 diameters apart, 2.1 diameters from laterals. Ocular quadrangle square, posterior median eyes on swellings (Fig. 363). Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen with pointed tubercles (Fig. 363). Total length 4.3 mm . Carapace 2.0 mm long, 1.7 wide, 0.9 wide behind lateral eyes. First femur 2.5 mm , patella and tibia 2.8, metatarsus 1.5 , tarsus 0.6 . Second patella and tibia 2.7 mm , third 1.4 , fourth 1.9.

Diagnosis. The large flat scape of the epigynum (Figs. 360-362) separates this species from all other Ocrepeira. The epigynum resembles that of Alpaida banos Levi from Ecuador.

## Ocrepeira jacara new species Figures 364-366; Map 6

Holotype. Male holotype from Fazenda Jacaranda, Itamarajú, Bahia State, Brazil, 9 Dec. 1977 (J. S. Santos), in MCN no. 11122. The specific name is an arbitrary combination of letters.

Description. Male holotype. Carapace, chelicerae, labium, endites, sternum, legs orange. Abdomen, white dorsally with anterior black (Fig. 366), venter gray. Posterior median eyes 0.5 diameter of anterior medians, laterals 0.4 diameter. Anterior median eyes 0.6 diameter apart. Posterior median eyes their diameter apart and on swelling. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 0.6 diameter of anterior median eyes. Third, fourth coxae each with one macroseta. Fourth trochanter with one macroseta. Abdomen shield-shaped (Fig. 366). Total length 3.8 mm . Carapace 2.4 mm long, 1.8 wide, 0.9 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 2.9 , metatarsus 1.9, tarsus 0.6. Second patella
and tibia 2.5 mm , third 1.5 , fourth 2.0 . Abdomen 2.1 mm long.

Note. The male is in poor condition, the palpi are transparent as if the specimen had once been dry.

Variation. Total length of males 3.8 to 4.4. Figures were made from the holotype, and soft parts may be slightly deformed because of its poor condition.

Diagnosis. As is the case for O. yaelae (Fig. 359), the radix of the palpus has a large sclerotized lobe (Fig. 364). The shape of the median apophysis and the presence of a tooth on its base (Figs. 364, 365) distinguish the species from O. yaelae (Fig. 359).

Specimen Examined. BRAZIL São Paulo: Estrada Santa Amaro, Engo. Marcilac, km 48, 15 Jan. 1961, ô (F. Werner, MZSP 7964).

## Ocrepeira comaina new species Figures 367, 368; Map 6

Holotype. Male holotype and male paratype from Alto Río Comaina, $04^{\circ} 27^{\prime} \mathrm{S}, 78^{\circ} 13^{\prime} \mathrm{W}$, Puesto de Vigilancia 22, "Falso Paquisha," $850-1,150 \mathrm{~m}$, Depto. Amazonas, Peru, 21 Oct.-3 Nov. 1987 (D. Silva D.), in MUSM. The specific name is a noun in apposition after the type locality
Description. Male holotype. Cephatic region with dusky marks on light orange; sides of carapace with dusky marks. Sternum light orange, legs light orange with indistinct darker rings. Abdomen white dorsally, sides black (Fig. 368); venter light dusky. Posterior median eyes 0.7 diameter of anterior medians, anterior taterals 0.5 diameter, posterior laterals 0.5 . Anterior median eyes 0.7 diameter apart, 0.3 diameter from laterals. Posterior median eyes 0.8 diameter apart, 1.6 diameters from laterals. Posterior median eyes not on swelling, facing dorsally. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 1 diameter of anterior median eyes. Third, fourth coxae each with one macroseta. Fourth trochanter with one macroseta. Abdomen oval without humps (Fig. 368). Total length 4.2 mm . Carapace 2.2 mm long, 1.9 wide, 0.8 wide behind
lateral eyes. First femur 2.2 mm , patella and tibia 2.7, metatarsus 1.7 , tarsus 0.7 . Second patella and tibia 2.4 mm , third 1.4 , fourth 2.0 .

Diagnosis. The terminal apophysis, unlike that of O. albopunctata (Fig. 377) is a small, simple thorn (Fig. 367). The base of the median apophysis (Fig. 367) lacks the sculpturing present in O. herrera (Fig. 391) and O. covillei (Fig. 402).

## Ocrepeira heredia new species Figures 369-371; Map 6

Holotype. Male holotype from 1 km N of Montana Azul, $1,500 \mathrm{~m}$, cloud forest, Heredia Prov., Costa Rica, 7-8 May 1987 (D. Ubick), in CAS. The specific name is a noun in apposition after the type locality
Description. Male holotype. Carapace yellowish, cephalic region and sides of thoracic region darker. Chelicerae yellowish, proximally dusky. Labium, endites, sternum yellowish. Legs yellowish with indistinct darker rings. Anterior of dorsum of abdomen black, divided by a white cardiac mark; posterior white with paired dark spots having light rings (Fig. 371); venter dusky with a pair of white patches. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.5 diameter apart. Posterior median eyes 0.8 diameter apart. Ocular quadrangle narrower behind than in front. Posterior median eyes on slight swelling. Height of clypeus equal to 0.3 diameter of anterior median eyes. Third, fourth coxae each with one macroseta. Fourth trochanter with one macroseta on left side only. Abdomen without distinct humps (Fig. 371). Total length 4.8 mm . Carapace 2.5 mm long, 2.1 wide, 1.0 wide behind lateral eyes. First femur 3.2 mm , patella and tibia 3.7, metatarsus 2.5 , tarsus 1.0. Second patella and tibia 3.0 mm , third 1.8 . fourth 2.7.

Diagnosis. Ocrepeira heredia male differs from the male O. comaina (Fig. 367), O. herrera (Fig. 391), and O. covillei (Fig. 402 ), which also lack distinct humps on the abdomen, by the shape of the median
apophysis, whose prong has two tips with a notch in between (Figs. 369, 370).

## Ocrepeira albopunctata (Taczanowski), new combination <br> Figures 372-379; Map 6

Tricantha albopunctata Taczanowski, 1879: 123, pl. 2 , fig. 36, of. Male holotype and 2 imm . paratypes from Amable Maria, Depto. Junín, Peru, in PAN, examined.
Araneus albopunctatus:-Simon, 1895: 817. Bonnet, 1955: 426.
Aranea albopunctata:-Roewer, 1942: 837.
Singa essequibensis:-Mello-Leitão, 1948: 17. Probably erroneous determination. Araneus trigonellus di Caporiacco, 1954: 107, fig. 26, ㅇ. Female holotype from Charvein, French Guiana, in MZUF, examined. Brignoli, 1983: 263. NEW SYNONYMY.

Synonymy. Tricantha Simon, the original genus of albopunctata is a theridiid with the type species T. tricornis Simon, 1864, and a subjective synonym of Phoroncidia (Levi and Levi, 1962). A specimen in the British Museum, collected by Hingston, labeled Singa essequibensis (Hingston) by Mello-Leitão, is $O$. albopunctata. But Hingston's (1932) description of Epeira essequibensis from Essequibo River, Guyana, with the type lost, is unrecognizable: "greyish-brown with distinct black spot in center of dorsum and two sinuous brown lines that start at the shoulders and converge toward the apex which they almost reach, ventral surface greyish-brown with a short median white longitudinal band. Total length 7 mm ." The light median area of the venter of the abdomen suggests that it may have been a Eustala. The Araneus trigonellus holotype is a female in poor condition and has a relatively narrow cephalic region (examined in 1973). One opening of its epigynum is covered by a scale from the male palpus.

Description. Female from Pasco, Peru. Carapace orange. Chelicerae, labium, endites orange. Sternum orange. Coxae, legs orange. Dorsum of abdomen with anterior black, posterior white (Fig. 376); sides of venter black, sharply bordered toward
dorsum, white but ventrally grading into gray and black. Posterior median eyes same diameter as anterior medians, anterior laterals 0.9 diameter, posterior laterals 0.8 . Anterior median eyes 1.1 diameters apart. Posterior median eyes 1.1 diameters apart. Posterior median eyes on very slight swelling facing anterolaterally (Fig. 376). Ocular quadrangle slightly longer than wide. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen shieldshaped (Fig. 376). Total length 7.5 mm . Carapace 3.9 mm long, 3.0 wide, 1.8 wide behind posterior median eyes. First femur 3.7 mm , patella and tibia 4.5 , metatarsus 3.1, tarsus 1.3. Second patella and tibia 4.4 mm , third 2.4, fourth 3.4.

Male holotype of T. albopunctata. Coloration as in female. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart, slightly more than 2 diameters from laterals. Posterior median eyes 1.2 diameters apart, 3 diameters from laterals. Posterior median eyes on slight swelling facing sideways. Third coxa with small macroseta, fourth with strong macroseta. Total length 4.2 mm . Carapace 2.6 mm long, 1.9 wide. First femur 2.7 mm , patella and tibia 3.0, metatarsus 1.8 , tarsus 0.9. Second patella and tibia 2.3 mm , third 1.4, fourth 2.0 .

Note. Males and females were collected in the same area in Mato Grosso, Brazil. Virgin males have the large scale in the palpus attached to the base of the embolus (Fig. 379), which is found in the epigynum of mated females (Fig. 373).

Variation. Taczanowski (1879, pl. 2, fig. 36) illustrates the abdomen; it is handcolored green. The radix of the male palpus has a large projection that supports the scale at the base of the embolus (Fig. 379). The scale is absent in mated males (Fig. 377). Some males lack the macroseta on coxae and trochanters entirely. Others have them on the fourth trochanter and coxa, the one on the coxa being on a tubercle. The conductor is much smaller and the paramedian apophysis wider in some in-
dividuals than in the specimen illustrated (Fig. 377) which, except for the scale, is similar to the holotype. Total length of females 7.0 to 10.0 mm , of males 3.0 to 4.7. The holotype of $T$. albopunctata is a virgin male. Illustrations (Figs. 372-374, 376) were made from specimens from Depto. Pasco, Peru; Figure 375 was made from a female from Mato Grosso State, Brazil, Figure 377 from Mato Grosso, Figure 378 from Depto. Madre de Dios, Peru, and Figure 379 from a male from Amazonas State, Brazil.

Diagnosis. The female is separated from O. viejo (Fig. 380) by the anterior attachment of the scape on the base of the epigynum (Figs. 372, 375). The male differs from O. viejo (Figs. 385, 386) by the shape of the terminal apophysis and the distal tip of the median apophysis, which is wide and has two points (Figs. 377, 378).

Natural History. Two males from Mato Grosso, Brazil, were collected, one in a gallery forest, the other in campo-grassland. The female from Juanjui, Peru, was collected at night.

Specimens Examined. GUYANA Moraballi Riv., Essequibo Riv., 15 mi . above Bartica, $\%$ (R. W. G. Hingston, BMNH); "[?] Brazil, Kartabo" (Kartabu Point, Ma-zaruni-Potaro Prov.), $06^{\circ} 23^{\prime} \mathrm{N}, 58^{\circ} 41^{\prime} \mathrm{W}$, Apr. 1924, o (W. Beebe, AMNH). PERU San Martín: Juanjui, $350 \mathrm{~m}, 16-24$ Aug. 1978, ¢ (D. Silva D., MUSM). Huánuco: Monzon Valley, Tingo María, 20 Nov. 1954, o ( E. 1. Schlinger, E. S. Ross, CAS). Pasco: Quebrada Chispa, NW Iscozacin,

345 m , Huancabamba, $10^{\circ} 10^{\prime} \mathrm{S}, 75^{\circ} 15^{\prime} \mathrm{W}$, 29 Oct. 1986, 2 (D. Silva D., MUSM). Cuzco: Paltaybamba [Paltaypampa], 2 imm. paratypes (K. Jelski, J. Sztolcman, PAN). Madre de Dios: Iberia, 30 Apr. 1947, ô (J. C. Pallister, AMNH). BRAZIL Amazonas: Manaus, Reserva Ducke, Aug. 1971, ô (M. E. Galiano, MEG). Rondônia: Ma-deira-Mamoré, railway camp, 1911, \& (W. M. Mann, MCZ); Fazenda Rancho Grande, NE Caculandia, Dec. 1990, ơ (G. B. Edwards, FSCA). Mato Grosso: 260 km N Xavantina, $12^{\circ} 39^{\prime} \mathrm{S}, 51^{\circ} 46^{\prime} \mathrm{W}, 400 \mathrm{~m}$, Feb.Apr. 1969, $2 \hat{\text { ô (Xavant.-Cachimbo Exped. }}$ MCZ); Barra dos Bugres, Nov. 1938, ㅇ, ò (A. Cerrutti, MNRJ).

## Ocrepeira viejo new species Figures 380-386; Map 6

Holotype. Female holotype and male paratype from La Selva, 4 km SE of Puerto Viejo, Heredia Prov, Costa Rica, from wasp trap nest, 20 Sept. 1981 (R E. Coville, ARØ7), in MCZ. The specific name is a noun in apposition after the type locality.
Description. Female holotype. Carapace, chelicerae, labium, endites, sternum, coxae, legs orange. Dorsum of abdomen white framed by black (Fig. 384); black sides fading ventrally into colorless venter. Posterior median eyes same diameter as anterior medians, anterior laterals 0.7 diameter, posterior 0.8. Anterior median eyes 1.2 diameters apart. Posterior median eyes 1.3 diameters apart. Ocular quadrangle square. Height of clypeus equal to 1 diameter of anterior median eyes. Abdomen shield-shaped (Fig. 384). Total length 5.0

Figures 372-379. Ocrepeira albopunctata (Taczanowski). 372-376, female. 372-375, epigynum. 372, 375, ventral. 373, posterior. 374, lateral. 376, dorsal. 377-379, male. 377, 378, left male palpus. 379, embolus, terminal apophysis (A), conductor (C), radix (R), paramedian apophysis (PM), and scale to be transferred to epigynum (SC).

Figures 380-386. O. viejo n. sp. 380-383, female. 380-382, epigynum. 380, ventral. 381, 383, posterior. 382, laleral. 383, with scale from male palpus. 384 , dorsal. 385,386 , male palpus.

Figures 387-391. O. herrera $\mathrm{n} . \mathrm{sp}$. 387-390, female. 387-389, epigynum. 387, ventral. 388, posterior. 389, lateral. 390, dorsal. 391, male palpus.

Figures 392-402. O. covillein. sp. 392-401, female. 392-398, epigynum. 392, 395, 397, ventral. 393, 396, 398, posterior. 399, dorsal. 400, abdomen, dorsal. 401, abdomen, ventral. 402, male palpus.

mm . Carapace 2.7 mm long, 2.1 wide, 1.4 wide behind lateral eyes. First femur 2.9 mm , patella and tibia 3.4, metatarsus 2.2, tarsus 0.9. Second patella and tibia 3.2 mm , third 1.9 , fourth 2.7 . Abdomen 3.8 mm long.

Male paratype from Costa Rica. Color as in female. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.1 diameters apart. Ocular quadrangle wider in front than behind. Height of clypeus equal to 1 diameter of anterior median eyes. Fourth coxa with one macroseta. Fourth trochanter with one macroseta on right only. Abdomen as in female. Total length 3.9 mm . Carapace 2.1 mm long, 1.4 wide, 0.8 wide behind lateral eyes. First femur 2.2 mm , patella and tibia 2.5 , metatarsus 1.5 , tarsus 0.7. Second patella and tibia 2.0 mm , third 0.5 , fourth 1.5 .

Note. Males and females were collected together. Figures 380-382, 384 were made from the holotype, Figures 385, 386 from the male collected with the holotype, Figure 383 was made from a female from near Iquitos, Peru.

Variation. Total length of females 5.0 to 7.7 mm , of males 3.2 to 3.9 . Females from Panama and some others have in posterior view of the epigynum a slight transverse lip dorsal to the scape and ventral to the dark areas, and a depression between this lip and the scape (Fig. 383). A male from Panama has no macroseta on the coxae and one small macroseta on each fourth trochanter.

Diagnosis. The species has a relatively narrow cephalic area, but the posterior median eyes are on a slight swelling. Ocrepeira viejo differs from $O$. albopunctata (Figs. 372, 374) by having its scape attached to the posterior of the base of the epigynum (Figs. 380, 382). The male differs from O. albopunctata (Figs. 377, 378) in the different shape of the terminal apophysis and the narrow prong of the median apophysis which also has a flat conical offset at its base (Figs. 385, 386).

Natural History. A female from Costa Rica came from foliage in a wet tropical forest, another from Panama from a canopy.

Specimens Examined. COSTA RICA Limón: 5.5 km E Guápiles, $200 \mathrm{~m}, 9$ May 1987, \& (D. Ubick, DU). PANAMA Colón: Fort Davis, Aug. 1936, ô (A. M. Chickering, MCZ). Panamá: Forest Reserve, Aug. 1936, \& (A. M. Chickering, MCZ); Barro Colorado Island, Lago Gatún, July 1936, \& (A. M. Chickering, AMNH); Pipeline Road, 12 July 1976, ㅇ (G. Montgomery, Y. Lubin, JAK). VENEZUELA Carabobo: San Esteban, 26 Jan. 1940, o (P. Andruze, AMNH). Sucre: Caripito, 15 Aug. 1968, \& (J. M. Osorio, FSCA). COLOMBIA Santander: Río Opón, Jan. 1947, ¢ (L. Richter, AMNH). Narino: Barbacoas, 20 Mar. 1974, o (W. Eberhard, MCZ); La Planada, 7 km S Chocones, 1,800 m, July 1986, ô (W. Eberhard, MCZ). PERU Loreto: Explorama Inn, 40 km NE Iquitos, 19-21 July 1989 (H. V. Weems, FSCA). Junín: Utcuyacu, 8-26 Feb. 1948, \& (F. Woytkowski, AMNH).

## Ocrepeira herrera new species <br> Figures 387-391; Map 6

Holotype. Fernale holotype from Genaro Herrera, $04^{\circ} 55^{\prime} \mathrm{S}, 73^{\circ} 45^{\prime} \mathrm{W}$, Río Ucayali, 100 m , Depto. Loreto, Peru, 24 Aug. 1988, (D. Silva D.), in MUSM. The specific name is a noun in apposition after the type locality
Description. Female holotype. Carapace orange, eye region darkest. Chelicerae, labium, endites orange. Sternum orange. Coxae, legs orange. Dorsum of abdomen white, framed by black and containing a pair of black spots (Fig. 390); venter dusky. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.7 diameter apart, 0.8 diameter from laterals. Posterior median eyes 0.8 diameter apart, 2 diameters from laterals. Posterior median eyes facing up, not on swelling. Ocular quadrangle wider than long, narrower behind than in front. Height of clypeus equal to 0.5 diameter of anterior median eyes. Abdomen oval (Fig. 390). Total length
5.5 mm . Carapace 2.7 mm long, 2.2 wide, 1.0 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.5 , metatarsus 2.3 , tarsus 1.0. Second patella and tibia 3.1 mm , third 2.0 , fourth 2.7 .

Male paratype. Coloration as in female but carapace orange with four black streaks radiating anteriorly from thoracic groove, cephalic region and sides of head dusky, sides of thoracic region with dusky patches. Legs with dusky rings on distal articles. Dorsum of abdomen greenish white with black anterior and sides, and two tiny black spots in middle. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.8 diameter apart, 0.5 diameter from laterals. Posterior median eyes their diameter apart, 2 diameters from laterals. Ocular quadrangle narrower behind than in front. Height of clypeus equal to 0.3 diameter of anterior median eyes. Third and fourth coxae each with one macroseta. Fourth trochanter with one macroseta. Total length 4.4 mm . Carapace 2.3 mm long, 1.9 wide, 0.8 wide behind lateral eyes. First femur 2.2 mm , patella and tibia 2.7 , metatarsus 1.8 , tarsus 0.7 . Second patella and tibia 2.5 mm , third 1.3 , fourth 2.0 .

Note. Male and female were matched because both have posterior median eyes facing up and both may have a similar pair of black spots on the oval abdomen.

Variation. Total length of females 5.2 to 6.4 mm . Several females lack the black spots on the abdomen. Illustrations were prepared from the female holotype and a male from Depto. Pasco, Peru.

Diagnosis. The female differs from that of most other species by having the posterior median eyes facing dorsally and an oval abdomen (Fig. 390). It differs from all by the triangular, rugose posterior median plate of the epigynum (Fig. 388). The male has only a lobe as terminal apophysis and, unlike O. comaina (Fig. 367), a short median apophysis (Fig. 391).

Specimens Examined. ECUADOR Napo: Pompeya, Río Napo, May 1965, \% (L. Peña, MCZ). PERU Loreto: Iquitos,

May 1920, \& (H. S. Parrish, MCZ). Huánuco: Huallaga Valley, Feb.-Apr. 1954, ㅇ (F. Woytkowski, CAS). Pasco: Río Chispa, 345 m , NW of Iscozacin, 30-31 Oct. 1986, ô (D. Silva D., MUSM). Madre de Dios: Zona Reservada Tambopata, 14 May 1988, \&, 15 May 1988, \& (D. Silva D., MUSM); Zona Reservada Pakitza, $11^{\circ} 58^{\prime} \mathrm{S}, 71^{\circ} 18^{\prime} \mathrm{W}$, 6 Oct. 1989, \& (J. Coddington, D. Silva D., MUSM); Reservada Cuzco Amazonica, 15 km NE Puerto Maldonado, $12^{\circ} 33^{\prime} \mathrm{S}$, $69^{\circ} 03^{\prime} \mathrm{W}, 22$ June 1989 , \& (D. Silva D., MUSM).

## Ocrepeira covillei new species Figures 392-402; Map 6

Holotype. Female holotype, two male paratypes from La Selva, 4 km SE Puerto Viejo, Heredia Prov., Costa Rica, 24 June 1980, from wasp nest (R. Coville, AR Ø1), in MCZ. The species is named after the collector.

Description. Female holotype. Carapace orange, cephalic region darker orange. Chelicerae, labium, endites dark orange. Sternum, coxae orange; legs dark orange. Dorsum of abdomen white, black anterolaterally (Fig. 399); venter dusky with a pair of white spots side by side (Fig. 401). Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes 0.9 diameter apart. Posterior median eyes 0.8 diameter apart. Laterals 0.4 diameter a part. Posterior median eyes without swelling, facing dorsally (Fig. 399). Ocular quadrangle square, slightly narrower behind than in front. Abdomen subspherical without humps (Fig. 399). Total length 8.0 mm . Carapace 3.2 mm long, 2.8 wide, 1.4 wide behind posterior median eyes. First femur 3.4 mm , patella and tibia 4.2 , metatarsus 2.8 , tarsus 1.0. Second patella and tibia 3.9 mm , third 2.4, fourth 3.5.

Male paratype collected with holotype. Color as in female but carapace orange with sides of thoracic region having darker patches. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.7 diameter apart. Posterior median eyes 0.7
diameter apart. Ocular quadrangle almost square, slightly narrower behind than in front. Height of clypeus equal to 0.8 diameter of anterior median eyes. Sternum with four macrosetae in center. Third and fourth coxae each with one macroseta. Fourth trochanter with one short macroseta. Abdomen oval without humps. Total length 6.4 mm . Carapace 3.1 mm long, 2.5 wide, 1.1 wide behind lateral eyes. First femur 2.7 mm , patella and tibia 3.4 , metatarsus 2.2 , tarsus 0.9 . Second patella and tibia 3.0 mm , third 2.0 , fourth 2.8 .

Variation. There is considerable variation and I first considered the specimens listed here to belong to several species. Specimens from Monterrico, Peru, have the ocular quadrangle narrower behind than in the holotype. The length and the width of the scape of the epigynum are variable (Figs. 392-398). One male lacks a macroseta on the third coxa on one side. Some males lack the macrosetae on the sternum. Total length of females 6.2 to 9.0 mm , of males 4.4 to 6.4. The illustrations (Figs. 392-394, 399, 401) were made from the holotype, Figures 395, 396 from a female from the Depto. Junín, Peru, Figures 397, 398 from Depto. Loreto, Peru, Figure 400 was made from a female from Amazonas State, Brazil, and Figure 402 from a male collected with the holotype.

Diagnosis. This species, unlike most, has a spherical abdomen, and the posterior median eyes face dorsally (Fig. 399). Females differ from other species by the shape of the scape and the narrow posterior median plate of the epigynum (Figs. 392-398) and from males by the shape of the terminal apophysis and the pointed tip of the median apophysis prong (Fig. 402).

Natural History. Most specimens were collected from wasp nests or wasp traps and others came from a rain forest.

Paratypes. COSTA RICA Heredia: La Selva nr. Puerto Viejo, Feb. 1981, ô, Feb. I986, ô, June 1982, ㅇ (W. Eberhard, TL321, MCZ), 20 June 1980, 와, ô (R. Coville AR Ø5, MCZ); Feb. 1960, ㅇ (W. Eberhard, 3235, MCZ).

Specimens Examined. TRINIDAD St. George: Simla, Arima Valley, $244 \mathrm{~m}, 27$ June-3 July 1978, of (B. Camilla, H. V Weems, FSCA). GUYANA Kurupukari Riv., Essequibo Riv., l Oct. 1937, of (Hassler, AMNH). SURINAM Paramaribo, Aug. 1967, ¢ (V. Doesburg, AMNH). COLOMBIA Boyaca: Río Upia, $850-950 \mathrm{~m}$, Nov. Dec. 1945, \& (AMNH). Meta: Puerto Lleras, Lomalinda, 13 Sept. 1986, \& (B. T. Carroll, MCZ). ECUADOR 78 (von Hagen, AMNH). PERU Loreto: Chanchamayo Valley, 2 (W. Weyrauch, AMNH); Parque Nac. Pacaya Samiria, $04^{\circ} 39^{\prime} \mathrm{S}, 74^{\circ} 21^{\prime} \mathrm{W}$ 12 Aug. 1989, \& (S. Silva D., MUSM); Estiron, Río Ampiyacu, 13 Nov.-9 Dec., $q$ (B. Malkin, AMNH); Iquitos $\ddagger(\mathrm{MCZ})$; Parinari Canyon, Río Samiria, Nov. 1912, ㅇ (Bluntschli, AMNH). Huánuco: Tingo María, Apr. 1940, o (W. Weyrauch, AMNH); 8 km W Las Palmas, 5 Oct. 1954, 9 (E. S. Ross, E. I. Schlinger, CAS). Pasco: Huancabamba, Quebrada Castillo, NW Iscozacin, $345 \mathrm{~m}, 10^{\circ} 10^{\prime} \mathrm{S}, 75^{\circ} 15^{\prime} \mathrm{W}, 8$ ( D . Silva D., MUSM). Junín: Amable María, ¢ (K. Jelski, PAN). Ayacucho: Monterrico, E Huanta, on Río San Miguel, $12^{\circ} 28^{\prime} \mathrm{S}$, $73^{\circ} 54^{\prime}$ W, (K. Jelski, J. Sztoleman, PAN). Madre de Dios: Reserva Cuzco Amazonico, $12^{\circ} 33^{\prime} \mathrm{S}, 69^{\circ} 23^{\prime} \mathrm{W}, 15-17$ June, 1989, 8 (D. Silva D., MUSM); Río Tambopata Reserve, 30 km SW Puerto Maldonado, Nov. 1982, \& (E. S. Ross, CAS), 18 June 1987, ô, 17-25 July 1987, 3오, 11-29 May 1988, 4ㅇ, ô, 2 imm . (D. Silva D., MUSM); Zona Reservada de Manu, Puesto de Vigilancia Pakitza, $11^{\circ} 58^{\prime} \mathrm{S}, 71^{\circ} 18^{\prime} \mathrm{W}, 26 \mathrm{Sept}$. 1987, 29 (J. Coddington, D.Silva D., MUSM), 9 Oct. 1987, 2 (D. Silva D., J. Coddington, USNM), 27 Nov. 1987, \& (J. Bohorquez, MUSM). BRAZIL Roraima: Estação Ecológica de Maracá, Itha de Maracá, Rio Uraricoera, 29 Mar. 1987, ơ (A. A. Lise, INPA). Amazonas: Rio Autás, Santa Amelia, 9 Sept. 1914, $¢$ (A. Roman, NRMS); Manaus, Igapó Tarumá Mirim, 3 Oct. 1987, $\circ, 11$ Mar. 1988, ㅇ (H. Höfer, INPA); Manaus, Reserva Ducke, 11 Apr. 1973, $\%$ (L. P. Albuquerque, MCN, 19290); Manaus, Reserva Campina, 7 Dec. 1973,


Figures 403-406. Ocrepeira sorota n. sp., female. 403-405, epigynum. 403, ventral. 404, posterior. 405, lateral. 406, dorsal.
Scale lines. 1.0 mm , genitalia 0.1 mm .

I (L. P. Albuquerque, MCN); Fazenda Esteio, Manaus, 11 Dec. 1985, ô (B. C. Klein, MCN 20052); Tabatinga, Aug. 1984, of (A. Cerrutti, MNRJ). Mato Grosso: Utiariti, Nov. 1966, ô (F. Lenko, MZSP 5616). Bahia: Fazenda N. S. Das Neves, Itamarajú, 9 Oct. 1987, ò (J. S. Santos, MCN 11011); Fazenda Almada, Uruçuca, 27 Nov. 1977, ô (J. S. Santos, MCN 20052). BOLIVIA La Paz: Miguillas, $1,800 \mathrm{~m}$, Irupana to Circuata, 2-3 Dec. 1984, ô (L. Peña, AMNH).

## Ocrepeira sorota new species

Figures 403-406; Map 6

Holotype. Female holotype from Sorota, $2,800 \mathrm{~m}$, Depto. La Paz, Bolivia, 11-14 Nov. 1984 (L. E. Peña), in AMNH. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange-brown, cephalic region gray to black. Chelicerae, labium, endites orange. Sternum orange. Coxae light orange; legs with femora orange, distally black, distal articles black; third femora with a black ring. Dorsum of abdomen black with irregular white spots and posteriorly paired white spots (Fig. 406); venter whitish gray, sides black. Eyes subequal. Anterior median eyes 1.3 diameters apart. Posterior median eyes 1.2 diameters apart. Ocular quadrangle slightly narrower behind than in front. Height of clypeus equal to 1 di-
ameter of anterior median eyes. Abdomen as in Figure 406. Total length 5.5 mm . Carapace 2.7 mm long, 2.1 wide, 1.1 wide behind lateral eyes. First femur 3.1 mm , patella and tibia 3.4, metatarsus 2.1, tarsus 0.7 . Second patella and tibia 3.2 mm , third 1.7, fourth 2.4.

Diagnosis. Ocrepeira sorota differs from all others by its black coloration (Fig. 406) and the unusual epigynum, having a median lobe with a lip and the posterior median plate raised above the lateral plates (Fig. 404).

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[^0]:    ' Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts 02138.

[^1]:    ** p bistriata and $F$ nephiloides (Levi, 1971) have a large macroseta and a smaller one on the male palpal patella. Bracketed characters are autapomorphies for the genus.

    Abbreviations: abd., alodomen; ant., anterior; betw., between; carap., carapace; ceph., cephalic; med., median; post., posterior(ly); prov., provisionally; rect., rectangle; reg., region; tuber(s)., tubercle(s); v., venter; A, terminal apophysis; E, embolus; LE, lateral eyes; M, median apophysis; ME, median eyes; PM, paramedian apophysis; PME, posterior median eyes; R, radix; Y, cymbium

[^2]:    Figures 186-191. Ocrepeira galianoae n. sp. 186-189, female. 186-188, epigynum. 186, ventral. 187, posterior. 188, lateral.

